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Welcome to our Special Awards Issue, the culmination of our entire year of reviewing, not only by the *Sound+Image* team but by our wider family of *Australian Hi-Fi*, *Australian InCar Entertainment*, *Best Buys Audio & AV*, and *Audio Esoterica*. After the listening and the debates over the shortlists and the winners and the Highly Commendeds, we engrave the crystal trophies and host a black tie evening (see p94) to which we invite the whole industry for an evening of awards, entertainment and music.

We've been putting on this Awards evening for 26 years now — it's an essential event in the industry calendar, and in recent years we've partnered with The Chester Group, organisers of the Australian Audio & AV Show (see our Show Report p16). But we've never turned a profit on it (and apparently we should), so this year for the first time we aimed to plug the deficit by opening the Awards up to sponsorship. So as you may have noticed on our cover and below, this year we have The Chester Group as our Platinum Partner, while as Gold Sponsors we have welcomed Brother, Entertaining Environments, HEOS, and QualiFi.

This sponsorship does not, of course, give the sponsors any input whatsoever into the judging process. As it turned out, HEOS did win an award for its HEOS 5 speaker and HEOS Amp, but that it did on performance alone. Distributor QualiFi also picked up an almost table-toppling stack of awards on the night, but since they're by far the largest distributor of consumer audio and AV in Australia with brands galore, it would be an unusual year if they didn't.

Entertaining Environments was a natural partner, as regular readers will know we've been carrying their newsletters within our pages this year. And Brother



was a welcome safe sponsor, being experts in imaging, yes, but onto paper rather than screens.

We thank them all, and suggest to our readers that you check out their links on the URLs below, or via our Awards microsite at [www.avhub.com.au/awards](http://www.avhub.com.au/awards).

I mention all this not, I hope, appearing to protest too much, but rather to emphasise to our readers that we adopted sponsorship of the Sound+Image Awards as carefully as possible, and with the absolute criterion of maintaining all independence and integrity in the judging and awarding of our accolades. Only by doing this could we deliver to our readers this ultimate buying guide of the very best audio and AV award-winners available in Australia today and into 2015. These are the products that have wowed us at every price level. There are some high-end beauties in here, for sure, but also the real-world hi-fi and home cinema gear that has delighted us by delivering unexpectedly wonderful performance at the price.

If this issue and any resultant equipment purchase bring you a tenth of the musical joy and AV impact that we have enjoyed in the process, I'll head into the holidays as a happy man.

Best seasonal joys to you all,

Jez Ford, Editor  
[www.twitter.com/jezfjord](http://www.twitter.com/jezfjord)



Volume 28 No. 1  
Dec 2014-Jan 2015 AWARDS ISSUE  
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Sound+Image is published six times a year  
by nextmedia Pty Ltd ACN: 128 805 970  
Building A, 207 Pacific Highway, St Leonards,  
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ISSN 1032-3899 © 2014



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Internet connection is strongly recommended to enjoy many advanced features and gain maximum viewing benefits.



## 2015 – THE YEAR OF WIRELESS MULTIROOM

So the wireless multiroom market is now officially in full swing, with multiple brands competing for the market established by Sonos. All have in common app-based control of a range of wireless speakers together with a receiver which can connect to an existing hi-fi — some also have receivers with internal amps as a “just add speakers” solution, plus various other variations as detailed below.

They all aim to stream a variety of cloud music services in addition to music stored on smart devices and home network shares, and the various units are linked either via your own home network or using a separate network created by the system itself. Noting that some brands were pushing this home network use as an advantage, Sonos recently revised its software so you can link its own range of products either way (we’d recommended sticking to its own reliable mesh network).

Of the new competitors, we have recognised the three earliest arrivals in our Awards this year (see p53) and have covered them extensively in our *News* section — Bose SoundTouch, Pure Jongo, and HEOS by Denon. Here we take a look at the new and incoming arrivals.

Meanwhile we are preparing a monumental comparison of many of these wireless multiroom systems, currently planned to publish in our April-May issue, and will continue to investigate newcomers as the market continues to expand.



**Bluesound:** Bluesound pitches itself a little differently, focusing on high-quality ‘HD’ music and on the ‘Node’ unit, which is its receiver unit for upgrading an existing system. But it also has a ‘Pulse’ speaker unit and a 2.1-channel ‘Duo’ solution, the PowerNode as a ‘just-add-speakers’ solution, and very interestingly the Vault, which rips CDs in lossless FLAC or lossy MP3 formats, storing them on its internal 2TB drive and protecting your digital library while streaming it to other devices. Bluesound points to its audio credentials saying it was developed by “many of the same people from world-famous NAD that pioneered HiFi in the 70s”, which curiously underplays that it is part of the Canada-based Lenbrook Group of Companies, which owns both NAD and PSB Speakers. It is distributed here by Convoy: [www.convoy.com.au](http://www.convoy.com.au)

**Definitive Technology:** The Maryland loudspeaker company has launched a more comprehensive range than most, and also has the merit of adopting DTS’s wireless streaming technology Play-Fi. The idea is for Play-Fi to allow any compatible product from any brand to join the home wireless network — so instead of limiting yourself to a single brand, you can mix and match for your own needs. This looks a valuable bonus, given the companies signed up for involvement, including the



**Harman Kardon:** We covered this in *News* last issue. The speakers are called Omni, but the system is apparently just ‘The Harman Kardon Wireless HD Audio System’. There are currently two speaker units and an ‘Adapt’ device for an existing system; they can stream up to 24-bit/96kHz files, each unit can also receive using Bluetooth, and they link up using your home network. We gather from distributor Convoy that it is likely to launch in Australia in February.

**Panasonic:** Panasonic currently has two speaker units and a receiver unit to upgrade an existing hi-fi. They carry the names ALL3, ALL8 and the SH-ALLIC Network Audio Connector, a reference to the fact that these also follow a wider system standard, in this case Qualcomm’s AllPlay, whose adherents currently include Panasonic, Monster (which has a SoundStage wireless line recently announced and on the way) and Lenco (Lenco has the PlayLink system, which we gather is shortly to arrive in Australia through Lenco’s distributor Amber Technology). This Qualcomm tech defines the specifications of the Panasonic units, which can receive high-res files up to 24-bit/192kHz in FLAC or WAV, as well as MP3s (though not, it seems, AAC or ALAC).

More info: [www.panasonic.com.au](http://www.panasonic.com.au)



Fine Sounds Group (McIntosh, Sonus faber and WADIA), Paradigm, Polk, Anthem, Control4 and others. The DefTech range itself has the W7 and W9 wireless speakers, the W Adapt (links to a hi-fi) and W Amp (just add speakers), plus a ‘W Studio’ with a soundbar and subwoofer. Definitive Technology is distributed here by Advance Audio — more info: [www.advanceaudio.com.au](http://www.advanceaudio.com.au)

## JAMO'S NEW CONCERT



Qualifi has released a new **Jamo Concert series** — one of which, the C 109, took out a Highly Commended in our awards this issue (see p59). It's a big name to live up to, since the Concert series was met with critical acclaim throughout the 1990s, and represented the

best technologies and performance Jamo could muster, then led by Preben Jacobsen.

Jamo is now under the Klipsch Group of companies, and has re-engineered the Concert concept in-house to create a range of speakers designed from the ground up.

The new speakers were conceptualised by industrial designer Kieron Dunk, who crafted Danish-style enclosures, for which bespoke high-performance drive units have been engineered by Klipsch's David Wilkes Jr. with the goal of a highly dynamic, detailed and expansive sound with deep low frequencies.

The Concert series features two ranges: the range-topping C 10 and entry-point C 9. Both ranges include floorstanding, standmount and centre-channel speakers, with the C 9 series featuring dipole surround speakers. Jamo offers a range of high quality subwoofers to match.

The speakers feature curved baffles and hand-polished gloss black, gloss white or walnut wood veneer enclosures, with metal outrigger feet and polished chrome logos. Fit-and-finish quality are outstanding, and the arrangement on the lower range — with the curved baffle blending with a traditional parallel-sided box — is a lovely bit of design.

As you can read in our write-up on p59, we auditioned the C109 flagship and it delivered a soundfield generous in both the lateral and depth perspectives, while bass power and overall dynamics were highly impressive.

More info: [www.qualifi.com.au](http://www.qualifi.com.au)

## CONSIDER THE LILIUM

Sonus faber has released a new loudspeaker, the **Lilium**, built around the knowledge gained through the creation of the \$130,000 Aida, but retailing at a mere \$89,999. The artisan quality of speaker manufacture at the Italian company is clear from the stunning orthogonal, dual enclosure cabinet which houses a 3.5-way system including a massive 260mm diameter SW26 XT-08 'infra woofer' designed by Sonus faber — this uses a lightweight paper composite sandwich cone driven by a 64mm diameter voice coil and operating from its own separate enclosure, which also houses a passive radiator to use the energy from its back-radiation to augment the Lilium's low bass response.

Higher up in the frequency range, Sonus faber uses three W18XTR-16 180mm-diameter bass drivers, which employ a lightweight sandwich cone structure formed by sealing a high-tech syntactic foam core between two external surface skins of pulped cellulose.

Midrange frequencies are handled by a single Sonus faber M18 XTR-04 180mm-diameter unit made with an air-dried unpressed blend of traditional cellulose pulp, kapok, kenaf and other natural fibres, while the tweeter is a 28mm 'Arrow Point' Damped Apex Dome (DAD) unit that uses a new neodymium motor system and an acoustic labyrinth rear chamber moulded



from natural wood. Distributors Synergy Audio had the Lilium running at the recent Audio & AV Show, driven by green-glowing electronics from Fine Sounds Group sister company McIntosh. Nice!

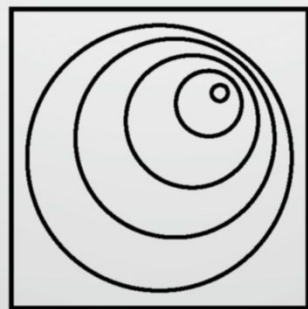
More info: [www.synergyaudio.com](http://www.synergyaudio.com)



### Bluetooth battery-powered electrostatics!

We happened on this in Westan's room at the show — a small hi-fi unit with conventional bass drivers and fold-out electrostatic wings. It can receive via Bluetooth, and it can run on batteries as a portable unit! It's a bit of a sideways jump for BenQ, hitherto best known to our readers for their image projection rather than their sound. It has a weird name too — the eVolo — and will retail here for \$399. More info: [www.benq.com.au](http://www.benq.com.au)





ΥΨΙΛΟΝ



### THREE PATHS TO SONIC GLORY.

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CD PLAYER OF THE YEAR  
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**Edgar Kramer - Audio Esoterica Australia**

*..."that is the best I have ever heard a CD sound"*

**Michael Fremer - Stereophile USA**

## SGR's AUSTRALIAN MUSICKUBE

Australia's **SGR Audio** launched the remarkable 'musicKube' Digital Playback System at the Audio & AV Show. Not only designed but also manufactured here in Australia, it's a high-resolution playback device for stored media, but "unlike any other, not just another PC motherboard disguised inside a fancy chassis", says the company.

The software is all its own, it can support up to 32-bit/384kHz files, indeed "every format known to man at every resolution including double DSD", SGR's Stuart Ralston (pictured) told Edgar Kramer at the Show.

"We've been developing the musicKube for four years now from the ground up," he told Edgar Kramer. "It's a hardware and software solution with a complete software package designed and developed in-house. The operating system is a very streamlined version of Linux. We cut out everything that is not needed as best we could to purely play back high resolution audio files – bit perfect.

"The software application was designed by us from scratch as well, and it's controlled via a Wi-Fi network using a phone, tablet, PC – any smart device. There's no app or download required, you just need a browser.

"The best part of the system is that it accesses our metadata database which we've created from scratch. This is called Audible DNA and it's our own, and as far as I know the only database that can accurately map the entire world's music including the classical genre. We can draw relationships between any entity and how they're involved in the music. There's no third-party software on board so we're in complete control of every part of the design."

**EK:** From the look of it, it's a modular approach...

**SR:** Yes, the production model is a modular design. The first box is the digital transport and actual server, the second box is the CD-ROM drive, for reading and ripping your music, and lastly the third box is an analogue toroidal power supply – which is an upgrade. Out of the box the unit will work with its switched-mode power supply but the analogue power supply gives an upgrade in performance.

**EK:** Does the musicKube stream music?

**SR:** No, it doesn't stream – it plays from internal storage and it



comes with a standard 1TB of solid-state storage. You can upgrade to 2TB and you can of course also expand your storage via a NAS drive. In the entire design there are no moving parts, no fans, so it's passively cooled. It has a quad-core processor [an Intel i3] with 16GB of RAM, that's more RAM than most desktop PCs, so it can play the largest DSD files.

**EK:** The unit has a HDMI input, we see.

**SR:** Yes, because it can playback surround sound in the DTS and Dolby Digital formats. There is some music out there available in surround sound formats so if you have a multi-channel system the musicKube can play that in up to seven channels.

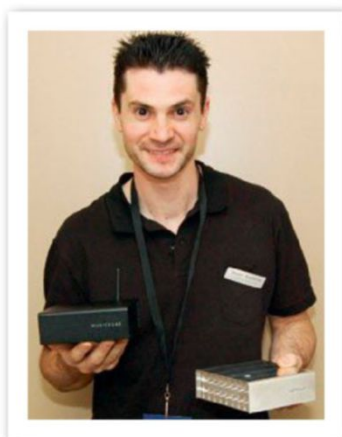
**EK:** The chassis is quite unusual and solidly assembled [see centre image, chassis on the right]. Where is it made?

**SR:** We make the chassis in-house as is the entire product, machined out of a solid billet of aluminium. It's an expensive way to do it but it's very accurate. And pretty cool.

**EK:** And what will be the pricing for the units themselves?

**SR:** The musicKube itself will be \$3000. When you add the Drive and the Power analogue power supply to make the kube formation you're looking at an \$8000 package.

More info: [www.sgraudio.com.au](http://www.sgraudio.com.au)



## BEST SOUND AT SHOW



ABOVE: Convoy International's Best Presented Room at the Australian Audio & AV Show, with a presentation under way by Powderfinger's Darren Middleton

## AUSTRALIAN AUDIO & AV SHOW 14

INTERCONTINENTAL MELBOURNE, 17-19 OCT

The organisers of the Australian Audio & AV Show gave their own awards this year for Best Sound at Show, as well as awards for Best Marketing (before the event) and Best Presented Room. And their winners were:

- Best Marketing:  
YAMAHA MUSIC AUSTRALIA
- Best Presented Room:  
CONVOY INTERNATIONAL
- Best Sound of the Show:  
KYRON AUDIO and TELOS AUDIO DISTRIBUTION (joint winners)

You can see pictures of these rooms (and nearly all the others) in our Show Report starting on p16.



## EPSON BRINGS LASERS!

One of the best AV dems at the recent Australian Audio & AV Show was in Westan's suite featuring the new **Epson Pro Cinema LS10000 projector**, which features 3LCD reflective laser projection. It's a big unit that will very much impress — 55cm wide and deep, 23cm high, with an RRP of \$8999, and the 'laser' tag comes from its use of a blue laser, which also produces the red and green light by illuminating a yellow phosphor (see diagram). While this laser diode light source can't be changed as easily as a lamp, the huge increase in lifespan means you probably won't need to — Epson told us they estimate its replacement life as being equivalent to two movies every night for 40 years!

The LS10000 is strictly speaking a 1080p projector, but it uses the system of 4K enhancement pioneered by JVC, which involves shifting pixels a half-pixel distance and then manipulating the signal information to create crossover areas which thereby deliver pseudo-4K. Where previous JVC projectors using this system accepted only a 1080p input, the Epson accepts a true 4K input via HDMI 2.0, even though it still then only truly projects at 1080p, plus the 4K enhancement system. Even though this isn't true 4K, we can attest to some impressive results from the demonstration.

Specs rate the LS10000 at 1500 lumens of colour brightness and 1500 lumens of white brightness, and infinite contrast thanks to absolute blacks (zero lumens during full-black scenes). ISF calibration tools and THX Display Certification promise highly accurate performance. More info: [www.epson.com.au](http://www.epson.com.au)



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# ATMOS – THE DEMOS!

Between last issue and this, we've heard two demonstrations of **Dolby Atmos**, the latest and apparently the greatest in multichannel surround sound (see also p79 and p92). The second was in a proper home cinema demonstration room with acoustic treatment and fixed in-ceiling speakers, whereas the first was a touring show set up in a hotel function room, with ceiling speakers hung from an impressive construction of ladders and beams hired from the local Bunnings.

This is not to denigrate the first demo — indeed we were hard pressed to pick a preference between the audible results (they used the same Dolby demo Blu-ray, so comparison was meaningful), which speaks well for both demos, and for this new height-enhanced format in general.

For the record, the first demonstration was from QualiFi, using Jamo speakers and a Marantz SR7009 expanded with an MM7025 stereo power amp for the additional height speakers. The second was from Amber Technology at their Warriewood HQ, using NHT front speakers, 6.5-inch two-way in-ceiling speakers (most probably Sonance) and an Onkyo receiver.

## Adding height

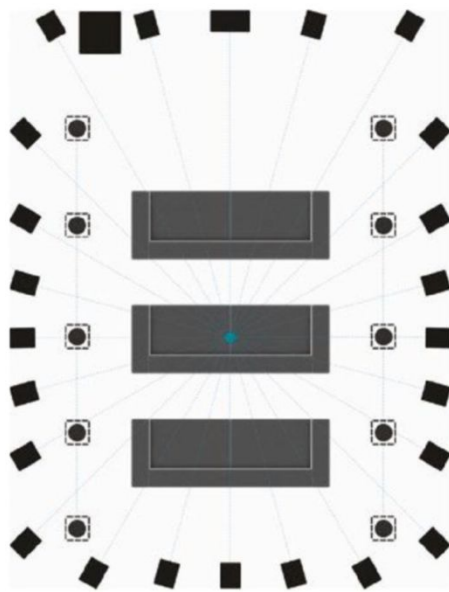
We detailed the Atmos concept in a feature last issue. In brief Dolby Atmos adds either two or four ceiling speakers to an existing or new multichannel audio system. If you currently have 5.1-channel surround, you could add two ceiling speakers to have a 5.1.2 Dolby Atmos system, or four to make 5.1.4. You needn't stop there — home systems can have up to 24 speakers on the floor and 10 overhead (see Dolby's diagram, right).

This ability to scale is at the heart of Dolby Atmos, because Atmos is not about adding channels, it is about creating a near-sphere of sound using however many speakers you have. And here's the thing, remarkable as this proposition sounds — the final audio mixdown happens in the AV processor, in the Atmos decoder, not in the studio where the soundtrack was fashioned.

## Adding objects

There are still audio channels — nine of them, now being called 'beds'. But the sound engineers can then add audio objects, their sound separately encoded along with metadata that describe their position in three-dimensional space, their physical spread, and the sound's intensity. Only at the decoder will these audio objects be placed into specific channels, this depending on however many speakers are available, and how they're set up. So exactly the same soundtrack used in the cinema can be used at home, with Dolby Atmos able to scale down to home layouts — indeed, we gather, all the way to mono if required.

This shows the remarkable computing power that lies within today's AV processors and receivers, for one thing, but it is most remarkable in delivering an entirely new way of storing and transmitting audio, as separate fragments tagged with metadata to be downmixed at the end user. With 128 audio objects available, the soundtrack guys can have a fair bit of stuff whizzing around the auditorium — or so you'd think. But there is a significant limitation on this, which we thought was audibly evident in both the Atmos demonstrations we heard.



◀ Does it scale? Just a bit — here's Dolby's diagram for a system with 34.1 speakers



▲ Atmos creates a truncated sphere of sound

## It's all around you

Atmos certainly adds an additional dimension in providing height channels, and of course the demo material comes steeped in ceiling sound to show off the new abilities;

you get bombarded with sounds flying above and around you. But what it doesn't do is come *at* you, like an axe in a 3D horror movie. The most surprising thing about the Atmos demos was that while stuff was whizzing around everywhere from front to ceiling to rear, there was nothing *in* the room. Everything is *around* the room. The second demo delivered some fairly localised positioning behind us, but never did anything go right in front of our face, buzzing like a fly before our nose.

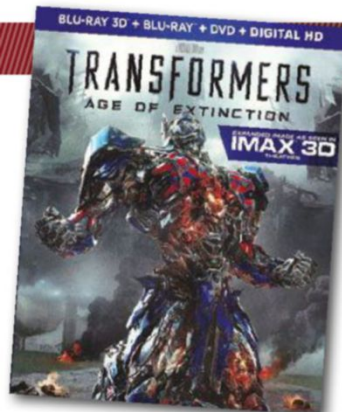
Why? Because in a cinema, if you mixed a fly to be an audio object in front of your nose, then it would appear to be in front of the noses of those in the dead centre rows, but progressively out of position for everyone else in the cinema. Ditto for front to back movement. In the cinema that's an unfixable problem which can only be addressed by not allowing it — no flies in front of your nose. So Atmos seems to deliver a sphere. The sound moves around, but it does not enter far inside.

Home cinemas have far fewer seats — even just one sweet-spot seat, if you like. So Atmos could potentially deliver a far more localised sonic experience at home than in the cinema. But it won't, precisely because the exact Atmos soundtrack from the cinema is being scaled down to the home without engineers remixing it for a different environment.

## It's not below you

And the sound is not quite a sphere but a truncated sphere. We were conscious that the sphere was cut off at seat level, effectively the tweeter level of the front speakers. There's not much to be done about that, and it's not new — there's never been any sound down there. But gaining the sound above seemed to create a contrast with the lack of sound





Good news: the first Atmos-encoded Blu-ray is already here! Bad news: It's *Transformers*...

below, a kind of emptiness as the soundfield fades to black.

### Did we like it?

Here we are pointing out what this new technology doesn't do, what was missing. Typical audio journalists, you're thinking, never happy. But hey, we loved it. There is greater immersion, a new level of impact and potentially audio control, and we can see why sound engineers must love it. Given the complete Z-space mapping of today's animated movies and others (e.g. the Atmos-mixed *Gravity*), we imagine that importing data from video object to audio object may even make manual steering redundant.

A usual question with a new format (notably at present with 4K TV resolution) is what material is available. For once, there's no wait — the first Blu-ray with a Dolby Atmos soundtrack is due out as we go to press: *Transformers: Age of Extinction* (don't all cheer at once). Others should follow rapidly, since Hollywood, Bollywood, China and others have been mixing blockbusters in Atmos for several years already.

As for Atmos decoders and upward-firing speakers, we confidently predict that January's CES in Las Vegas will be awash with Atmos-compatible hardware. And retailers love it — it's very easy to explain to consumers. You get height — up there, listen. Big smiles all round.

### Big tick

So on the whole, after two enjoyable demos, we'd be giving a big tick to Dolby Atmos so far. We had but one burning question to be answered, and Dolby Australia's Michael Smithers was able to do so after the Amber presentation. With an audio object, we asked, is the position described as a vector? Does the system say 'Now it's here, and in five seconds it'll be over there — you fill in the gaps' or does it describe the object's path granularly with a metadatum position for every sample? It is, we gather, the latter. Phew. Glad that's sorted. *Jez Ford*

### CEILING SPEAKERS, REALLY?

Dolby specifies Atmos ceiling speakers as full-range, not satellites with subwoofers filling in bass. We applaud this, and Amber's demo room showed it could be achieved with aesthetic subtlety — four 6.5-inch white-grilled in-ceiling speakers did an effective job.

But if you can't wire there or just can't handle the idea, there are already various speakers or add-on speakers designed to be conventionally positioned and then bounce the sound off the ceiling to deliver the height information (see Dolby's diagram). Some are integrated into the top of floorstanders, others sit on the top of existing speakers.

We haven't heard this reflective system yet — we'd guess it would loosen the accuracy of positioning and drop a certain amount of treble information in the reflection compared with actual ceiling speakers, though we gather Atmos decoding will compensate for this "Atmos-enabled"

speaker solution rather than true ceiling speakers, presumably with timing and EQ changes. Dolby also says that to do the reflecting thing you need a reflective ceiling, which may come as a shock to those who have spent money making their ceilings nicely absorbent to minimise reflections from the screen speakers. Vaulted ceilings are also out.

We hear from UK colleagues who have heard demonstrations switching between ceiling and reflecting systems — it ain't half bad, they say. So we'll wait to experience it for ourselves before placing dedicated ceiling speakers on too high a pedestal, as it were.



new



Bluetooth | digitalradio | RDS

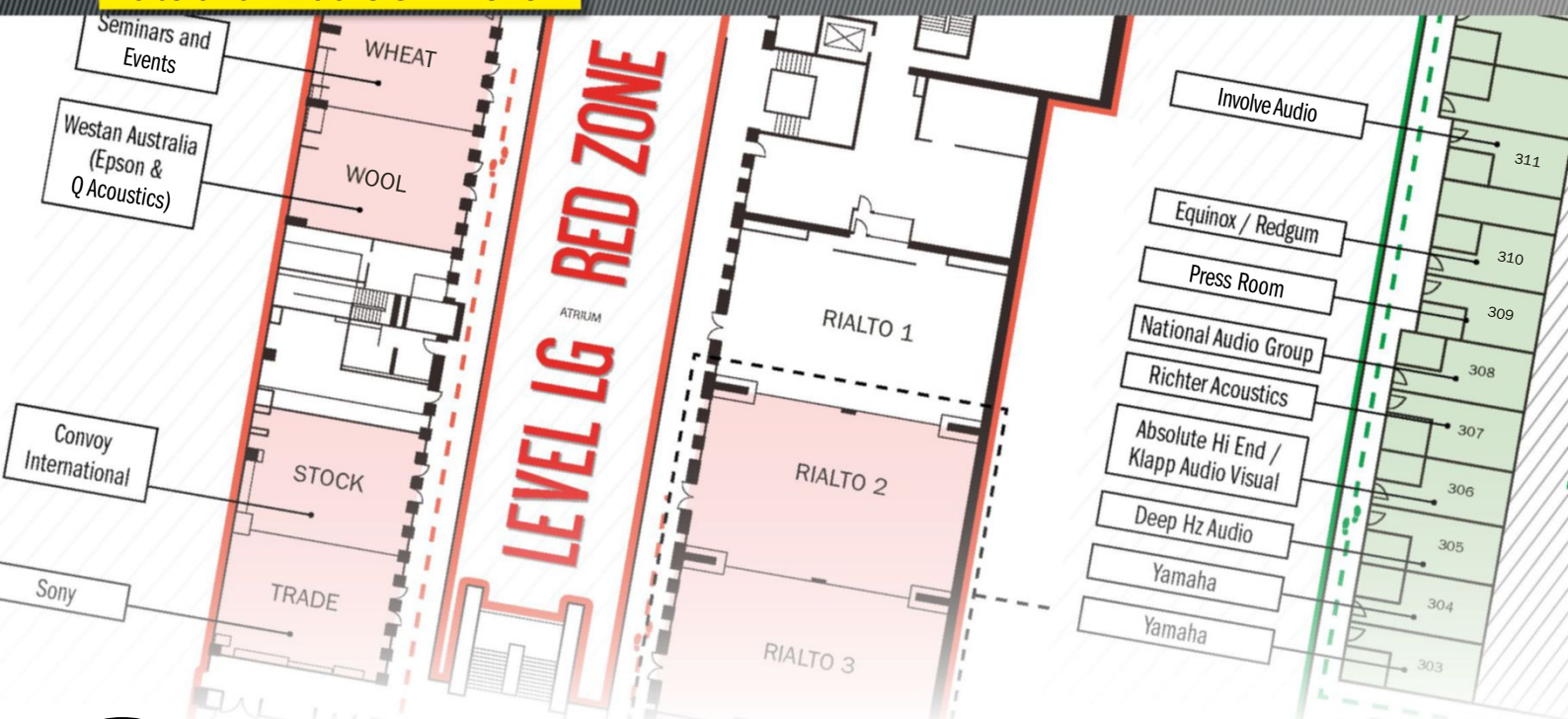
## The new R1 deluxe tabletop radio



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# Show Time!

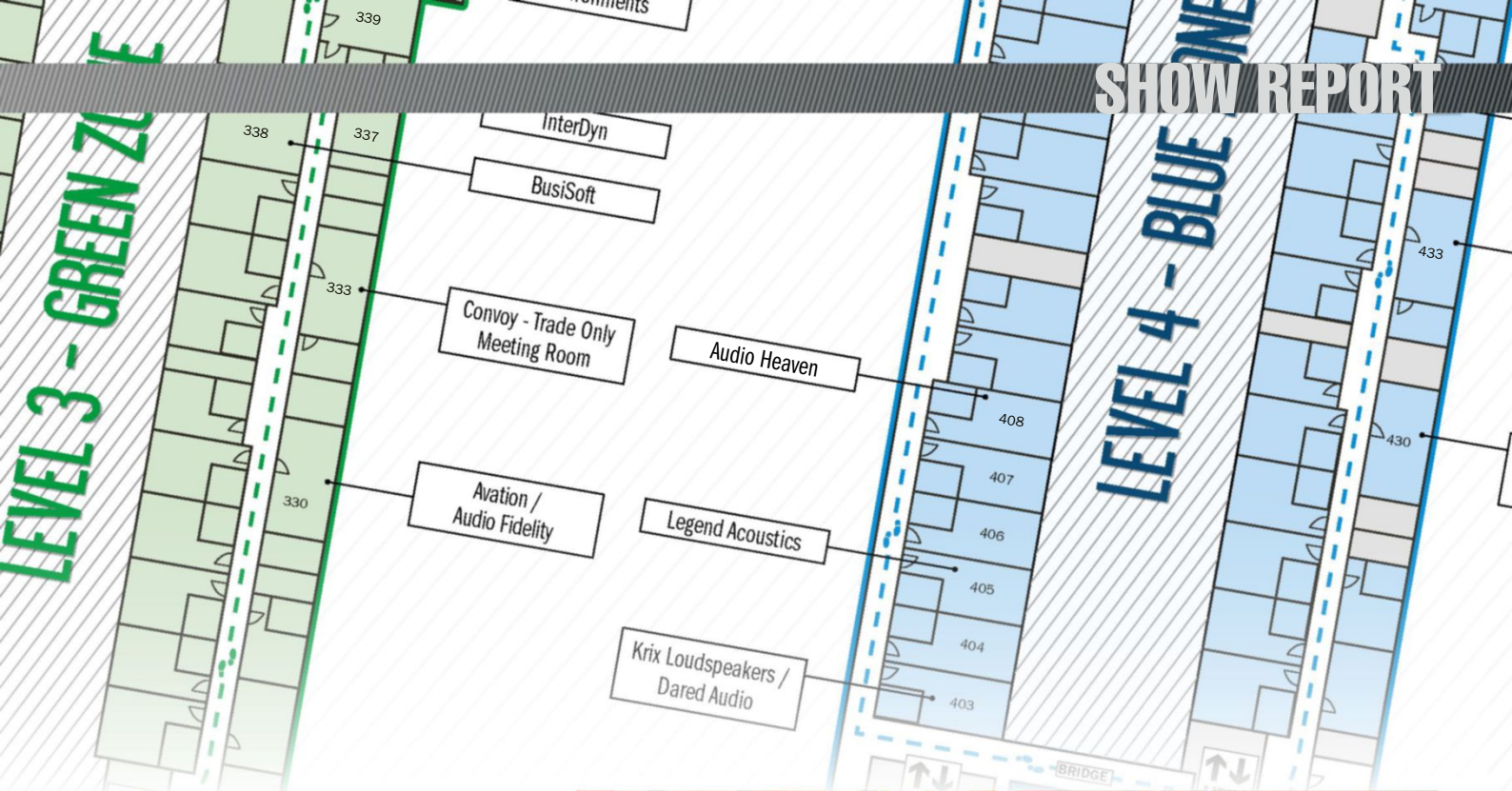
**The Australian Audio & AV Show once again pulled in the hi-fi fans to hotel rooms stripped of bedding and filled with luscious sounding hi-fi and home cinema systems. Come take a tour...**



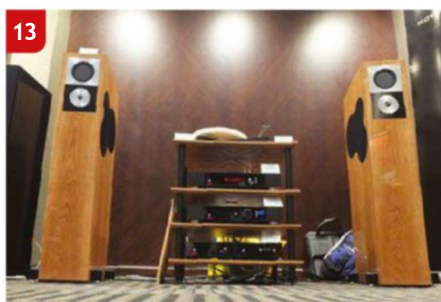
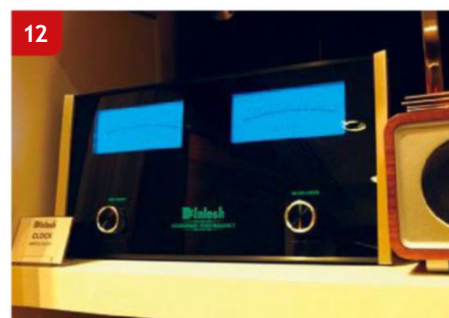
The Australian Audio & AV Show returned this year to the luxuriously-appointed rooms of Melbourne's InterContinental The Rialto, running from 2pm on Friday 17th October through to the Sunday at 5pm. This is no big open exhibition space, but rather individual hotel rooms stripped of their furniture to make space in each for a complete audio or AV system. Visitors can then wander from room to room hearing systems play in something like an approximation of the home environment.

And what systems! AV fans could enjoy 4K video demos from Sony and the latest and greatest in full-HD from Epson and BenQ, while fans of two-channel music could hear everything from the latest Australian speaker designs from the likes of Krix, Richter and Legend Acoustics alongside US, European and Asian equipment ranging from real-world affordable to outright esoterica. The open space of the Rialto ballroom was repurposed from being the venue for the Sound+Image Awards on the Wednesday night into a zone where headphones and other systems could be auditioned, while the hotel bar stood ready for those needing to refresh their ears or other parts. Here's our primarily pictorial report...





1. Rialto to the left, InterContinental to the right — the Show occupies hotel rooms on the third and fourth floors plus suites and meeting rooms on the Lower Ground
2. The Show kicked off at 2pm Friday, though plenty of showgoers arrived early
3. Westan had a big suite to demonstrate Q Acoustics speakers and Epson's EH-LS10000 laser projector, an impressive unit retailing at \$8999; it accepts a 4K input, displaying at 1080p but using JVC's pixel-jiggling trick to achieve 4K-like resolution...
4. Westan also had a room for BenQ with a short-throw projector and also this eVolo sound system using fold-out electrostatic speakers plus conventional drivers
5. Sony had 4K screens in reception and in its well-designed suite where a full theatre demonstrated high-res audio, surround sound and 4K visuals...
6. ...as well as a headphone section where showgoers could audition a whole range of Sony headphones
7. QualiFi combined NAD's latest Masters Series components with the new Jamo Concert series as well as showing off its award-winning HEOS multiroom audio
8. Convoy was awarded 'Best Room Display' by the show organisers for a 'Mad Men' themed room packed with equipment...
9. Powderfinger's Darren Middleton (left, pictured with Gary Tye) gave a talk on changing music delivery systems in Convoy's room on the Friday afternoon
10. The Bluesound multiroom wireless system was in pride of place, modelled here by Convoy's John Martin
11. Synergy Audio Visual neatly combined multiple systems in its suite including this full McIntosh system driving \$89,999 Sonus faber Lilium speakers...
12. ...and this McIntosh clock at \$2300 — it is just a clock, but with needles!
13. Synergy's Rega system with RP10 turntable, Saturn-R CD player and Elicit-R amp
14. Synergy's Philip Sawyer demonstrates Cambridge Audio gear on a Quadraspire rack







## LEGEND ACOUSTICS' DR ROD CRAWFORD ON THE TIKANDI GRANDE BE

"The Tikandi Grande Be is my attempt to crystallise the last 20 years of commercial speaker design," Dr Rod Crawford of Australia's Legend Acoustics told Edgar Kramer at the Show. "Basically the Tikandi Grande Be takes our original design to another level by adding a dedicated bass/midrange driver which operates roughly from 150Hz to 450Hz. That takes the pressure off the other drivers. One of the problems with the three-way Tikandi is that the drivers are operating at the limits of their range — you're pushing them as far as you'd like and sometimes even a bit further, in terms of trying to keep them linear and without break-up and all the distortions that come with that. Adding that extra driver, making it a four-way system, allows us to use a much more dedicated midrange/upper midrange driver free of where many drivers start to cause problems above 1kHz-2kHz where the ear is most sensitive. They start to break-up where, in terms of music, you hear a harshness or brightness to the sound. That's avoided with a dedicated driver. The Grande Be has two 12-inch drivers firing in opposite directions to cancel cabinet vibrations."

**EK:** And it's an active system, no passive offered?

**RC:** Purely active at that level. Each driver requires its own amplifier channel — which is expensive, but the advantages are that the drive units are directly driven, which translates to very low

distortion, great detail and massive dynamics, things that are compromised in passive crossovers. This is a very accurate speaker with extremely low distortion and it will expose inadequacies in the rest of the system chain. And the Tikandi is now controlled by DEQX — the DEQX has an extraordinarily good USB stage, so at the source level it's excellent."

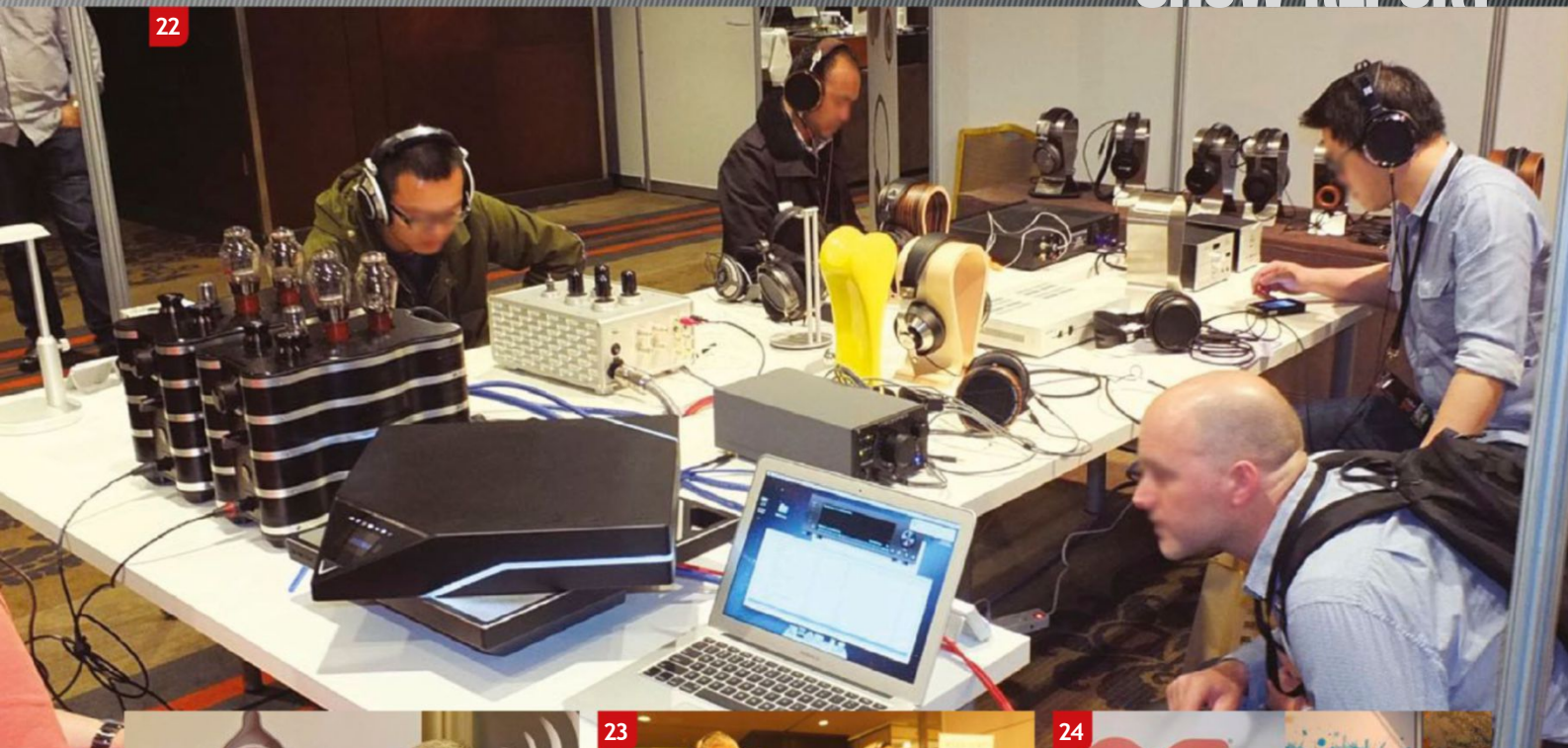


Above: Dr Rod Crawford prepares the Tikandi Grand Be speakers that were playing at the Show

15. Noisy Motel brought some fine players, headphones and accessories to the Rialto Room's 'headzone' — we were particularly thrilled to get hands-on with the FiiO X1, a high-res audio player priced at just \$129
16. Speakerbits showed off its repair and restoration skills with some vintage hi-fi on display, plus its range of Ortofon cartridges
17. Advance Audio's KEF headphone team model the M500 headphones, which were on audition in the Rialto Room's 'headzone'
18. Audio Dynamics was one of several companies to demonstrate how equipment stands and supports can improve your system's sound; here the Atacama range of stands from the UK
19. Water and hi-fi don't generally mix well, but Liquid Sound was out to prove itself the exception, bringing its audio systems that spray jets of brightly coloured water in time to your music — *son et lumière!*
20. The lure of vinyl was keeping a steady stream of visitors riffling the racks at Quality Records... Plus (it was the first year our Editor abstained from purchase himself, though he'd invested heavily just before the show...)
21. On up Level 4, Dr Rod Crawford was demonstrating Legend Acoustics' new Tikandi Grande Be (see panel, left)
22. Addicted to Audio had the biggest exhibit at the Show for headphone lovers (faces blurred to protect the innocent), with some wild kit available for audition, including the Woo Audio WA 234 monoblocks (left corner), the \$37,888 Light Harmonic Da Vinci USB DAC...
23. ...and later added the Blue Hawaii electrostatic headphone amp to drive a pair of Stax electrostatic headphones...
24. ... and hosted Dale Lott, founder of Aurisonics, shown proving the tensile strength of the aramid quad-weave cables connecting the Rocket IEMs to their plugs
25. Devialet products were driving the 'SAM-ed' Atohm and Vivid Audio speakers in the Aviation & Audio Fidelity room. SAM (Speaker Active Matching) provides speaker matching algorithms within the Devialet amplification to optimise performance of specific loudspeaker models (see interview panel, right)



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#### DEVIALET'S ANDY KENNARD ON CHANGE

"Devialet's ambition as a company is to change the face of audio," Andy Kennard, Devialet's General Manager for Asia (above) told Edgar Kramer at the Show. "I know that sounds incredibly grand and over-the-top but it's very, very serious. We have 46 engineers in the company and are hiring more every week. We have 15 or 16 software engineers — we have more software engineers than many brands have people. So that gives you a sense of the work, the creation and the innovation that we're doing. We invest 80% of all our profits into R&D and new inventions, with 71 patents among our products. We aspire to be a company of innovation and we want to change things, from the visual design to changing the logic that says the best performance equals one box per function. At every level, this is very natural for us to think let's do something clever, something different and look at every stage from source to the sound of music that you hear. We say, 'Can we make it better?' And SAM was one thing. If you have very accurate, very precise, low noise, low distortion amplification, as we do, and with a DSP in the unit, we can correct the errors of physics that speaker manufacturers have to face. We can fix that."

**EK:** And do you find with the amps there's an obstacle from enthusiasts expecting something bigger?

**AK:** Absolutely! In fact we have two barriers. One is, 'How can something so small be high performance when all I care about is sound and

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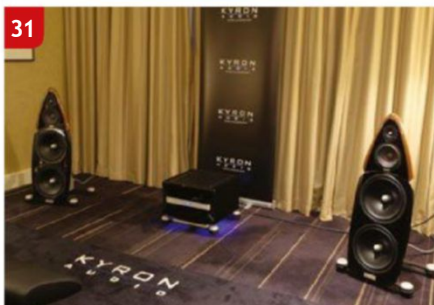
not all the features?' And we say, no, we're hardcore audiophiles and we're about the emotion of the music. That's why the logo of Devialet is a little teardrop. And we're a no-compromise technology and engineering company to produce the best sound; we just have a different take. For example, you don't go to a supercar maker and say, give me the best engine, the best cornering and the best technology and make it as ugly as hell. You don't. You want the feel of the leather, the curves of the chassis... you want everything about it to be right. The world is changing, even in the more conservative markets... so it's not about big black boxes anymore. We're accelerating the change of mindset of the conservative audiophile... The other barrier is trade-ins. You can imagine, you have a DAC, a phono stage, a preamp and a power amp, maybe monoblocs, all separate items. Then we come along and say we can improve your sound with just one beautiful box. So what do customers do with all the

old stuff? It's a difficult thing for a dealer to handle. In a specific case in Singapore a customer changed his entire system with expensive monoblocs and we gave him better sound, more real estate and some cash. The secondhand value of what he got rid of was more than our new all-in-one product.

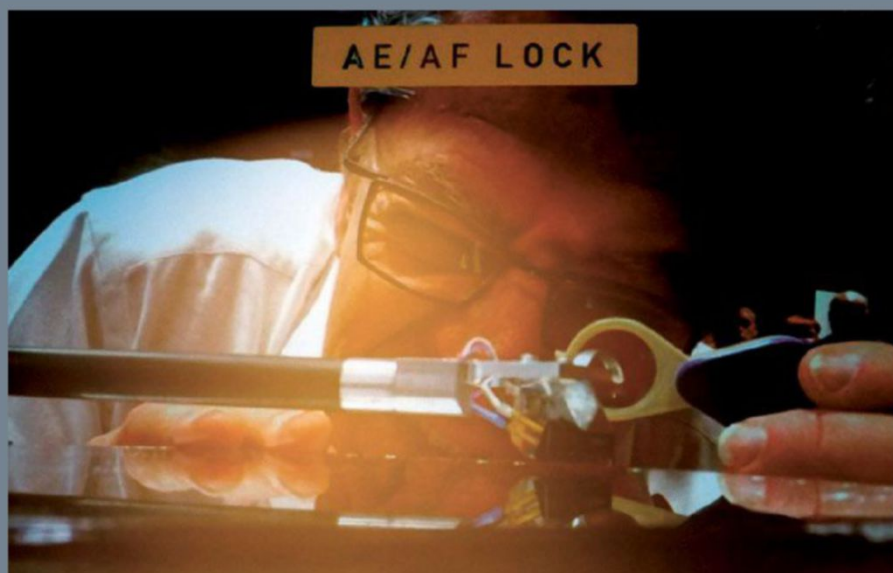
**EK:** So with all that talent behind you, what can we expect from Devialet in the near future?

**AK:** I'll give you both a closed and an open answer. The closed answer is I can't tell you because it's super-secret but very exciting! The open answer is that you can't change the world of audio if you only stay in the high-end audio niche. So we have to make our products in the future more affordable and easier to use for a non-audiophile. That's inevitable. We want to change the world of audio; we look at everything. The only thing that holds us back is the speed at which we can create and materialise ideas.





26. Advance Audio's Michael DiMeglio shows off Definitive Technology's W7, one of the new range of wireless multiroom audio compatible with DTS's Play-Fi system
27. Also on show in Advance Audio's room (though not playing) was the 200W Mark Levinson 585 stereo amplifier
28. The Naim Audio Statement pre-power amplification had its Southern Hemisphere debut at the Show, with Naim's Doug Brady on hand to demonstrate with music streamed from a hard-drive collection
29. Frits Dalmose, MD of Anszu Acoustics, talking us through Raidho Acoustics' bespoke drivers...
30. ...while also demonstrating Anszu cabling in Entertaining Environments' fine-sounding Moon/Raidho system
31. Kyrn Audio was awarded joint Best Sound of Show from organisers The Chester Group for the thrillingly open and dynamic performance of the Kronos speakers
32. BusiSoft demoed a thoroughly modern room pairing Auralic electronics with Dynaudio's wireless Xeo speakers
33. InterDyn were demonstrating the Darbee feature of the latest Oppo Blu-ray players, with a static display of colourful Pro-Ject turntables and the chance to audition both the award-winning Oppo PM-1 headphones on balanced cables and the new PM-2 on unbalanced cables



## THE DÖHMANN & FREMER SHOW

The Wheat Room at the Show is reserved for seminars and talks, which this year included presentations on high-res audio, on multiroom wireless audio, classic vinyl listening sessions, and demonstrations of vinyl cleaning.

The daily session pulling the biggest crowds was the two-handed Turntable Masterclass presented by Mark Döhmman of Telos Audio Distributors (and designer of the Continuum Caliburn turntable) with Michael Fremer, a Contributing Editor to Stereophile magazine in the US and author of the AnalogPlanet blog.

This entertaining and informative hour (extended far longer by Q&A whenever no other event immediately followed) involved an introduction by Döhmman on how vinyl LPs are mastered and cut, and therefore some of the characteristics required for playback, followed by Fremer's complete turntable set-up demonstration, cunningly thrown to an overhead screen (pictured) courtesy of Döhmman's iPhone locked in position with a stand made of Blu-tac. All high-tech stuff! Takeaway summary? Turntable set-up is extremely long, hard, and requires cocktail sticks.





## Don't just listen. Experience

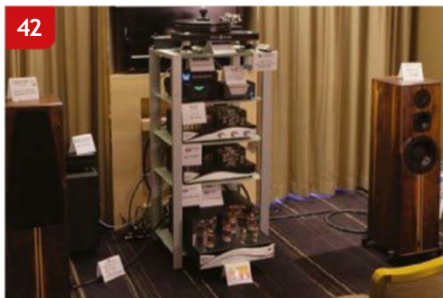
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34. Osborn Loudspeakers' room was sounding fine when we visited, driving the large Osborn Epitome Tower Reference speakers with AM Music's 805MM MkII amplifier
35. McLeans had the only darkened room of the Show, a great space for concentrating on the music from the DeVore Orangutan O/96 speakers and electronics including the LM Audio 2191A valve amplifier
36. The Equinox Neptune floorstanders were being driven by Australian Redgum Black Series RGi120ENR Signature amplification... Redgum was celebrating its 21st birthday at the Show
37. National Audio Group's room combined Audiovector's SR 6 Avantgarde speakers with AVM amplification and a choice of sources — there were CD players from AVM and from the Swiss-made Weiss...
38. ...but the bulk of the replay in the room was inevitably from the gorgeous Avid Hi-fi Acutus SP turntable
39. An interesting display from Involve Audio in Room 311 demonstrated the company's Surround Master system — not yet available but just completing its IndieGogo fund-raising as we go to press. It aims to create surround signals from two-channel source material and was playing back through the pictured Y4 panel speakers
40. Richter Acoustics were back with a whole new series of loudspeakers evolving classics like the Dragon, Wizard and Merlin models to new Series V status. It was widely complimented as being one of the best sound-per-dollar demonstrations at the Show
41. Absolute Hi End and Klapp Audio-Visual shared a room showing Bel Canto electronics, Bladelius electronics, and Marten Design and Wilson Benesch speakers; pictured is Cameron Pope from Krispy Audio
42. Deep Hz Audio's room featured the Merrill-Williams REAL 101.2 turntable, a 2TB music server and DAC from Wyred 4 Sound, Daedalus Audio Athena V3 loudspeakers, and pre-power amplification and phono stage from Zesto. Bonus points for excellent equipment labels!



## EMERGENCE RE-EMERGES

The precursor to this Emergence A54 speaker (which is one small satellite of a 2.1-channel sub-sat system) was demonstrated in Sydney two years ago without really delivering its promise of the 'Acoustic3D' technology. This year Malcolm Duffield was demonstrating the final products and explaining the tweaks that had the system now delivering remarkable levels of room-filling sound from a system so small. Malcolm's assertion that soon all speakers will be made this way may be a little optimistic, but it was great to see such a radical Australian solution come to fruition.





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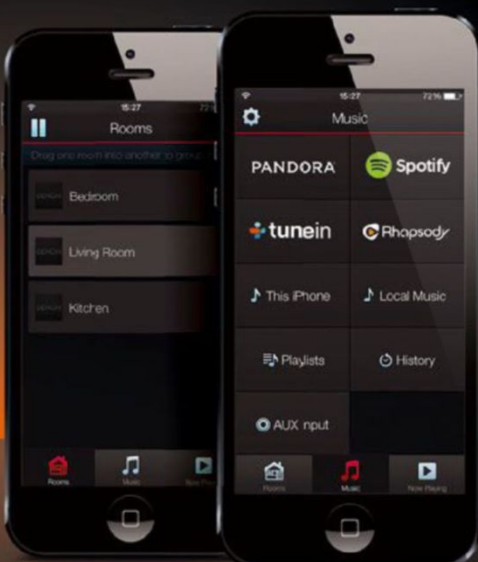
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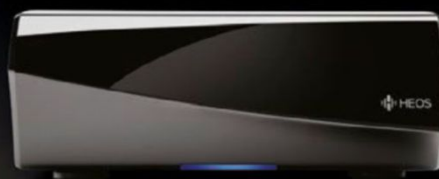
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Turn any speakers into a wireless zone.



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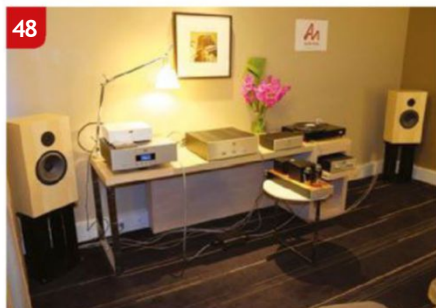


## HEOS LINK

### Wireless Pre-Amplifier

Turn any Stereo System into a wireless zone.





43. Yamaha Music Australia had two rooms, both displaying their newly regained stereo prowess. In their first room the new 500 and 700 Series were paired with, respectively, the new A-S710 amplifier and the A-S1000 amplifier...
44. ...while the award-winning Soavo floor-standers and the bookshelf models were running in the second room driven by Yamaha's also award-winning (last year) A-S3000 amplifier...
45. ...which was on display with innards visible for visitors to see the quality within
46. Warwick Freemantle of Pure Music Group with the TechDAS turntable and cartridge with Thales tonearm and TechDAS amplification and Gauder Acustik speakers, alongside digital music from an Antipodes Music Server and EMM Labs DAC
47. Krix Loudspeakers had the debut of the 40th Anniversary Neuphonix loudspeakers, only 40 pairs of which will ever be built, while also a popular audition were the standmount Krix Acoustik MkII, proving a high-value proposition. Krix shared the room with Dared Audio's valve amps, now with distribution in Australia again after an absence of eight years
48. Finn Bespoke Technology brought Audio Note to the Show, and rather than repeat last year's high-end system, they demonstrated how great its \$6500 AN-J speakers can sound with either vinyl or CD through the Vindicator Silver Signature power amp (on the centre table), price around \$8500
49. Audio Heaven demonstrated YBA electronics and the upmarket Lumin streamer with dc10audio Briton II horn loudspeakers all the way from Santa Fe...
50. Telos Audio was awarded joint Best Sound of Show by show organisers The Chester Group for the first of its two rooms, featuring the legendary Continuum Caliburn turntable and the Spiral Groove SG1 turntable, plus an Ypsilon CD player/DAC and amplification, German Physiks Omni Borderline MkIV speakers (not shown in this picture – the speakers were changed during the show) and the pictured Brodmann JB205 speakers, plus much more
51. The second Telos Audio room had our award-winning Ypsilon Electronics CDT-100 CD player with smaller Brodmann VC-7 speakers driven by (on the bottom shelf) Thrax Audio Heros hybrid power amplifiers
52. Audio Marketing was showing new Musical Fidelity amplification including the M6Si integrated and some amazingly well-priced Focal loudspeakers in the new 900 Aria range, including the walnut Aria 948 are priced at \$4999 using the company's new flax drivers, and driven here by the Krell Vanguard amp, also \$4999
53. We find that listening for long periods can cause ear fatigue, requiring regular refreshment... +



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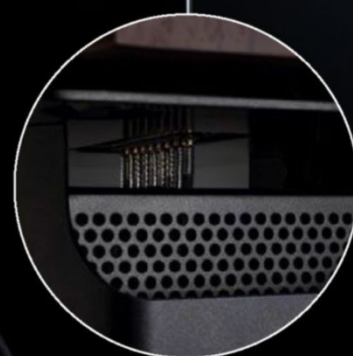
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# 2015 SOUND IMAGE AWARDS



## SOUND+IMAGE AWARDS 2015

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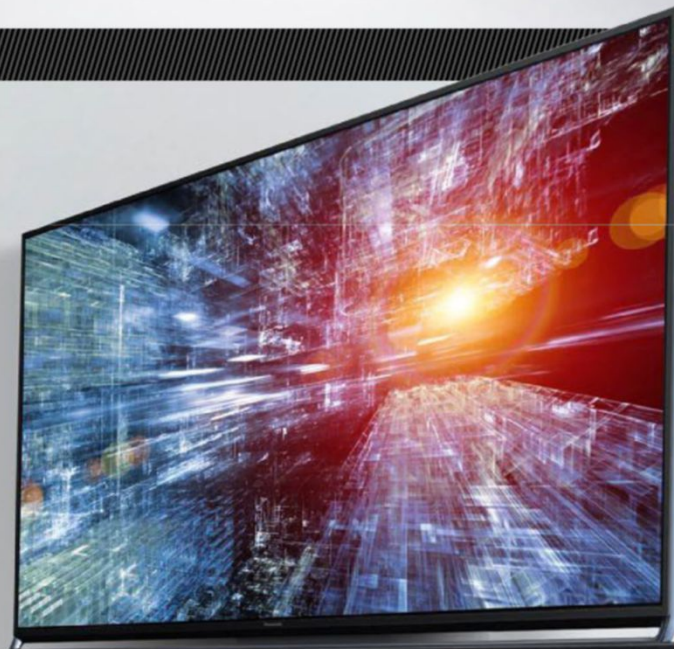
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SOUND+IMAGE AWARDS 2015

# TVs & PROJECTORS





## TELEVISION OF THE YEAR

# Panasonic Viera TH-65AX800A

All of our winning televisions are 4K models, quadrupling the pixel count of full-HD's 1920 x 1080 in order to deliver more detail. While it's true that proper 4K source material is very thin on the ground at present, we expect that to change over the next 12 months via downloads and streams, while 4K Blu-rays (and new players) are slated for a hopeful late-2015 release. Meanwhile the 4K screens still make a fine job of upscaling from Blu-ray as well as displaying your own photos and 4K movies if you have a suitable camcorder or camera — Panasonic, our winner here, might point you at its own Lumix GH4, which generates stunning 4K footage.

Meanwhile the \$5799 65-inch AX800 does a remarkable job of continuing Panasonic's recent TV leadership in terms of picture quality, despite the company's pull-out this year from the plasma technology it so strongly pushed as superior to LCD. Yet aside from a few mottled near-blacks, this TV proved a top-notch performer, with a picture that reminds us of plasma TVs at their best, except that with this 4K TV things are more detailed and sharper. The scaling of 1080p content from Blu-ray was very good, and processing lag is pretty low for a 4K model at around 109ms, and with a game mode that hauls this back to a mere 38ms, which ought not interfere too much with your reflexes.

The smarts are good as well, including the new FreeviewPlus system which integrates all catch-up TV with the usual EPG (though some regional channels have opted out — check for your area).

As usual we tweaked the default settings to get the best results — turn off the ridiculous overscan applied to 1080p and SD material, and turn Sharpness down from 50% to anything between 0 and 10%. Full details in our full review next issue. That done, enjoy the jaggie-smoothing upscaling of this superb television, and know that the HDMI 2.0 inputs should keep you futureproofed from the perils of HDCP 2.2 copy protection.

More info: [www.panasonic.com.au](http://www.panasonic.com.au)

## HIGHLY COMMENDED: LG 55UB850T • SONY BRAVIA KD-55X8500B • TCL U55E5691FDS



Well-priced at \$2399, this LG shows that even at 55 inches 4K Ultra HD display can make a difference when upscaling Blu-rays, while the new webOS interface is genuinely easy to use with its row of simple semi-animated icons across the bottom of the screen, and also good networking using its SmartShare. LG continues to impress. More info: [www.lg.com/au](http://www.lg.com/au)



Sony's 55-incher is \$2499 (though prices change regularly, so check their websites), again using 4K's worth of pixels to provide stunning Ultra HD if you have 4K material, great Blu-ray upscaling if you don't. The smarts are well-organised on a single master home page, and colour — reds especially — are a strength here. More info: [www.sony.com.au](http://www.sony.com.au)



Price vs quality is the strength here — a good 4K panel and processing in a 55-incher currently at just \$1599; see our review last issue for tweaks to get it working at its best. One caveat is that the HDMI inputs are version 1.4, which may (nobody yet knows for sure) limit future 4K compatibility. More info: [www.tclelectronics.com.au](http://www.tclelectronics.com.au)



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A firmware update for Dolby Atmos will be available in late 2014 for these Pioneer AV receivers: SC-LX58, SC-LX78 & SC-LX88.

**Pioneer**



## AV PROJECTOR OF THE YEAR

# Sony VPL-VW500ES

Folks may argue whether 4K resolution is worth the price of early adoption on a TV screen around 55 inches, but there's less argument about the difference the quadrupling of resolution can make on a big projection screen. Sony has led the way in native 4K projectors, leveraging its professional gear to produce last year's award-winning VW1000ES, and now at about half the price, this VW500ES. If \$13,999 still sounds pricey, remember that the best full-HD projectors can cost far more — also that the earliest 1080p projectors were all up around \$40,000. Given the Sony's superb projection

quality, with three SXRD 4K panels and a 265W lamp generating up to 1700 lumens, this is actually exceptional value, capable of extraordinarily sharp and detailed images, even when upscaling from Blu-ray resolution — there was very little about the picture that didn't have us falling head over heels in love with it. Colour was magnificently deep and natural, laid over black levels that were very solid. Even the picture processing, which we so often tweak or turn off, made clever decisions as to motion smoothing and superfine sharpening — try the Cinema Film 1 preset with Motionflow tweaked down to 'Smooth Low'.

With true 4K content the results were eye-poppingly good, not simply because of the scenes or the photography, but because of a limitless sense of reality in the way even mundane images were conveyed. And the Sony has twin HDMI 2.0 inputs, which include HDCP 2.2 copy protection should that be imposed upon us when 4K Blu-rays become a reality.

A small level of 3D crosstalk was one of our very few minor negatives on this magnificent performer... we await time with the new VW300ES (\$10,999) to see how it compares!

More info: [www.sony.com.au](http://www.sony.com.au)

## HIGHLY COMMENDED: BENQ W7500 • EPSON EH-TW9200W

We've recognised BenQ's projectors with awards on a number of occasions, usually at the entry level, which the company labels as "entertainment projectors". This **BenQ W7500** is a real "home theatre projector" at the top

of the company's range (\$3499), and shows the company can still compete at this price — see our June-July issue for tweaks to have it perform at its best. In one regard it beats the competition — its 3D performance is exceptionally good. More info: [www.benq.com.au](http://www.benq.com.au)

viewing room, with bold and accurate colours and a lovely richness. Its dynamic iris expands the claimed contrast ratio to 600,000:1, but we did virtually all our watching with it switched off, because black levels were fine without it. Price is \$3999. More info: [www.epson.com.au](http://www.epson.com.au)



Our second Highly Commended winner, **Epson's EH-TW9200W** is a three-chip LCD full-HD projector which comes with a WirelessHD connection, so you can avoid running a signal cable to it. Useful as that can be, it's for image quality that our award is mainly given, wonderfully bright in our





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SOUND+IMAGE AWARDS 2015

# SOURCES & SYSTEMS







## MEDIA STREAMER/SERVER OF THE YEAR

# Accoustic Arts Streamer ES

As much as vinyl has been on the resurgence for the last few years, it must be admitted even by the staunchest of die-hards that we're living in a digital age, and the \$7499 Accoustic Arts Streamer ES really sums up what high quality digital music reproduction currently means. It is able to stream music either wired or wirelessly from a music server, also offering internet radio capabilities and playing all manner of music files from USB flash drives. It can also act as a mini digital hub via its S/PDIF digital input and two USB inputs (front and rear).

Unlike some networking gear, the Streamer ES proved a breeze to operate and set up even for the most technophobic audiophile; it is assisted by a built-in high quality 3.5-inch LCD screen and intuitive menus. Or as a non-networked device we loaded USB sticks and the hard drive which holds most of our high-res audio, and the Streamer ES recognised

the devices and instantaneously displayed their folder hierarchy on the LCD screen for easy navigation via the remote control.

The Streamer ES has its own internal DAC and analogue outputs, so it can plug straight into an amplifier, but Accoustic Arts does also offer the companion Tube DAC II MK2 (\$14,500) to take things to even higher levels. The precision with which the combo handles all material allows (speaker system permitting) accurate and lifelike imaging across a wide soundstage and with thrilling sonic dynamics to test your amplification.

Able to play HD audio files in WAV, AIFF and FLAC up to 24 bit/192kHz, the Streamer ES is therefore well placed to deliver those increasingly available high-res audio files, and to do so at outstanding levels of accuracy, translating to a thrilling source component for the digital age.

More info: [www.absolutehiend.com](http://www.absolutehiend.com)

### BUYING ADVICE

#### FILE PLAYBACK

Playing audio files from a computer used to be plagued with problems – now file-based replay is potentially the purest playback path available, and even audiophiles are having their ears turned by products like our award winners here. You don't need a computer for playback – dedicated streamers, players and DACs can deal directly with the files within a more traditional chain.

## HIGHLY COMMENDED: SONY HAP-Z1ES • WESTERN DIGITAL WDTV LIVE



Always keen to recommend something for every budget, our Highly Commendeds are the \$2999 Sony HAP-Z1ES, and the WDTV at a mere \$150. The Sony is a high-level unit playing from its own 1TB hard drive (an external drive can also be added); it syncs this neatly with a shared computer folder so that all your latest music is both backed up

on its beautiful display or its even more beautiful app. [www.sony.com.au](http://www.sony.com.au)

We reviewed this as the **WDTV Live**; it has now been updated as just the WDTV, but we have no reason to believe anything drastic has

and then played without the perils of networking. There are balanced and unbalanced line outs available, while the control interface is one of the best we've ever seen, both

changed. It is the go-to budget media player at just \$150, with various services onboard but especially wonderful for its blanket file support of everything including Blu-ray/DVD rips and .mkv files (even multichannel high-res audio FLACs, which hardly anything ever plays!). It easily won our recent round-up of budget players, and at this price you could have one for every TV in the house. [www.wd.com](http://www.wd.com)





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W1070+



W1080ST+

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Find out more at [Videoprojector.BenQ.com.au](http://Videoprojector.BenQ.com.au)



Because it matters





## MEDIA STORAGE OF THE YEAR

# QNAP HS-251-2G

This is the first time we've delivered an award for storage, yet at *Sound+Image* we've considered it an essential area of home entertainment ever since our digital music collections expanded to the point where losing them in a crash would cause many tears before bedtime.

Once you've ripped, bought or acquired a large collection of either music or movies, the importance of backing up becomes paramount. And in a networked modern home you want to be able to share these files to multiple locations. That makes a multiple-bay NAS drive an ideal solution — it attaches direct to the network so everything can access it, and you can set the multiple drives to ensure that you lose nothing even if one of them fails.

And we offer congratulations to QNAP for creating the HS-251 (\$699 without drives) with its particular application to audio-visual users like ourselves. It plays to QNAP's strengths in NAS design, but instead of the usual noise-

producing cooling fan and chunky upright styling, the HS-251 has its drives enclosed in a pleasingly-styled slimline box with a brushed aluminium top and no fan. It is intended to be quiet, and to complement an AV set-up.

It accommodates two hard drives — up to 12TB if you use the new 6TB models just beginning to appear, but the most economical drives at the moment on a dollar-per-terabyte basis are 3GB. A couple of WD Red drives (these optimised for NAS service, and approved by QNAP) can be purchased for little more than \$300. So a whole 3TB system will come to less than \$1100.

We must confess that our review experience, on which we'll report more thoroughly in an upcoming issue, was not all plain sailing. This is still an IT product, and one into which you must install the drives yourself, though this is a five-minute job and requires no more skill than the ability to turn a screwdriver. But the easy set-up from the cloud didn't work

for us ('device not found'), while the alternate set-up procedure using local software also ran into problems requiring the changing of DNS server information. (These are the usual joys of IT-style networking products, of course, whereas AV consumers prefer to have rock-solid performance out of the box. Sigh.) But once sorted, high speed transfers were possible with large video file throughput typically around 100 megabytes per second, about as fast as you're likely to get from any network device. When it came to serving up content, the performance was very good using both QNAP's own media server, also TwonkyMedia and the music-only MinimServer (which is DSD-compatible).

The QNAP HS-251 brings IT closer to the world of home entertainment, and does a very good job of it. The one real area it needs to work on is making installation bulletproof, because unlike computer users, we AV folk do like things to just work. [www.qnap.com](http://www.qnap.com)

## HIGHLY COMMENDED: SYNOLOGY DISKSTATION DS713+ NAS SERVER

When we did a round-up of NAS drives earlier in the year, this is the drive that came out on top — a semi-pro two-bay NAS priced at \$579 without drives. It has two Ethernet connections (use both for higher throughput) and a couple of USB 3.0 sockets as well as one USB 2.0, so you can add more storage — and with eSATA you can add an expansion unit with up to five more drives... so along with exchangeable drives, you should be set for some time even against the advance of Moore's Law. We had very few problems

setting up the Synology, and its DSM software is highly versatile in what and how it serves to clients and from where, and it can usefully transcode FLAC, AAC and AIFF to WAV on the fly if a client can decode them. As with the QNAP, the set-up and options do require you to enter the world of IT for a while, but the reward is fast transfer speeds, the ability to serve files any way your system prefers, and of course, everything backed up across the two drives keeping your media safe from disaster! [www.synology.com](http://www.synology.com)





# All New 600 Series



PRODUCT OF THE YEAR

Bowers & Wilkins 685 s2 Loudspeaker

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## TURNTABLE OF THE YEAR UNDER \$3000

# Avid Ingenium

Given the price of the other seven turntables available from Avid HiFi in the UK, the Ingenium qualifies as its 'entry-level' vinyl spinner, at \$2499 (including arm, but not cartridge). Yet it incorporates many of the higher models' elemental components, chief among them Avid's unusual upside-down platter bearing, topped by a tungsten carbide steel bearing and rotating on a piece of sapphire, therefore extremely strong. This inverted bearing is also self-stabilising, potentially offering superior speed stability, higher inertia and better planar rotation than conventional bearings.

The cork-topped MDF platter sits atop the drive hub, which is turned by a rubber belt powered by a 240V 24-pole synchronous AC motor that's isolated within a separate housing. A two-step pulley enables 33⅓ or 45rpm selection by manually moving the belt.

Our review sample was fitted with a Pro-Ject 9cc carbon-fibre arm and Ortofon 2M cartridge, but you can specify a Rega RB303 tonearm if you prefer. You can also buy the Ingenium pre-fitted with either a nine-inch SME arm or one of SME's super-accurate twelve-inchers. The 2M cartridge tracked extremely well, delivered excellent

low-frequency performance and very good high-frequency extension, not to mention outstanding stereo imaging — indeed we've never heard the 2M Red sound better than it did in the Project 9cc arm fitted to the Avid Ingenium... a *ménage à trois* made in musical heaven. With no rumble from the bearing, no noise from the drive motor, and certainly no mains hum, there is beautiful silence as background, so all you'll hear is music. Pitch-perfect rotation, no wow or flutter, and no extraneous low-frequency noises: what more could you want from a turntable? More info: [www.nationalaudiogroup.com.au](http://www.nationalaudiogroup.com.au)

## HIGHLY COMMENDED: PRO-JECT RPM 1.3 GENIE • PRO-JECT 1XPRESSION CARBON CLASSIC



Our two Highly Commendeds are both from Pro-Ject, which covers the breadth of the turntable market and counts both these among their entry-level decks. The **Pro-Ject RPM**

**1.3 Genie** is a unique design at \$499, with Pro-Ject's 8.6S tonearm and Ortofon's 2M Red cartridge mounted to one of the unusual 'ears' and the motor on the other. Given the cartridge sells for over \$100 alone here, this is real value and it performs above its price-point.

Reviewed in our previous issue, **Pro-Ject's 1Xpression Carbon Classic** at \$1299 raises the bar with a new carbon tonearm and an Ortofon 2M silver cartridge, the combination delivering real depth and solidity to vinyl playback, along with pitch-perfect performance and



outstanding frequency response and channel separation. And all this from a good-looking deck with stunning finishes in olive (pictured), mahogany, black and white. More info: [www.interdyn.com.au](http://www.interdyn.com.au)



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## TURNTABLE OF THE YEAR OVER \$3000

# Clearaudio Performance DC

**C**learaudio's Performance DC is a true giant-killer: it'll slay some competitors selling at 10 times its asking price, which is \$5795. Given that it comes packaged in Australia with Clearaudio's new Clarity tonearm (available separately for \$2195) and the Mark 2 version of Clearaudio's Virtuoso MM phono cartridge in MkII guise (\$1145 separately), you can see that it is not only a fantastic turntable, it also represents fabulous value for money.

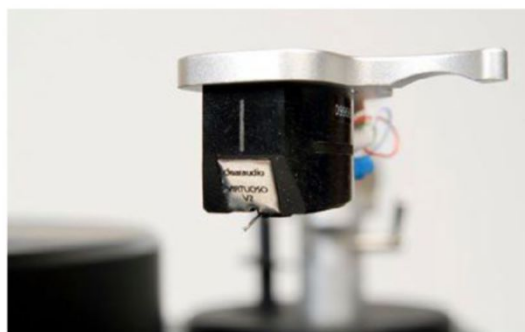
At first glance, the Performance DC looks like an ordinary turntable — and yet it's anything but. Underneath the POM platter (that's polyoxymethalene, a synthetic thermoplastic) there is no turntable pressure bearing; instead the platter floats on a magnetic field and is prevented from wandering away from its 33 $\frac{1}{3}$ rpm orbit by a lubricated ceramic shaft. The only thing conventional about the platter is that it's driven by a rubber

belt motivated by a pulley fixed to the shaft of a standard DC motor. Clearaudio's Clarity tonearm is also unusual, using a magnetic bearing rather than the more usual gimbal bearings. It uses a carbon-fibre arm tube.

At this level there is some set-up required, though since it's a 'package' the Clarity tonearm will be installed in the plinth, the Virtuoso V2 cartridge fitted and aligned, and both the tracking weight and the anti-skating force will have been adjusted. Anti-skating is adjusted from underneath the turntable, at the base of the arm post, rather than by a weight.

We could not detect even the slightest trace of wow or flutter, its pitch stability was absolutely outstanding, and the the Virtuoso cartridge sounded spectacular — sweet, deep and tight, with not a rough edge to be heard. A truly magnificent turntable, at a price to be celebrated.

More info: [www.kedcorp.com.au](http://www.kedcorp.com.au)



NO HIGHLY COMMENDED PRODUCTS IN THIS PRICE CATEGORY



"I have to say, it was among the best sound I have ever heard anyplace. Ever!" **MICHAEL FREMER**

"There's bass and then there's bass...dipole bass, that is. The Kronos system delivered the best bass our listening room has been graced with. Period." **EDGAR KRAMER, AUDIO ESOTERICA**



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BEST SOUND OF SHOW  
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**CD PLAYER OF THE YEAR UNDER \$1000**

# Marantz CD5005

**T**he CD5005 is a direct descendent of the CD5004 which won a *Sound +Image* award last year, and is the same price — \$500. Although we didn't have the opportunity to compare them side by side, it would appear that while the CD5005 uses exactly the same chassis as the CD5004, things are quite different inside.

One major difference is that the new CD5005 uses a completely different DAC, a Cirrus Logic CS4398, which is a 24-bit/192kHz stereo DAC that uses oversampled multibit Delta-Sigma architecture, but with a shaping technology that eliminates distortion due to capacitor mismatch. In fact, this is the identical DAC used in the higher-priced Marantz CD6005, so it's an excellent example of 'trickle-down' technology at work... which a company as large and well-connected as Marantz (part of D&M Holdings, which also owns Denon) is ideally situated to take advantage of.

Also new in the CD5005 is the CD transport itself. This is still a tray-loading device, and externally we couldn't see any differences from the previous model, but Marantz says all the motors have been improved, along with the linkage mechanisms. Certainly the new tray seemed to operate marginally faster than the old one, and was a little quieter in operation.

As with previous players it not only plays CD, CD-R and CD-RW discs but also discs created on a home computer with MP3 and WMA files. This CD mechanism is also the same one used on the more expensive CD6005.

Not exactly inside the player, but also new for the CD5005 nonetheless, is the handsome remote control, a step up from the one used on the older CD5004.

One thing that's stayed the same is that Marantz still eschews the use of standard op-amps packaged as integrated circuits, and is instead using discrete circuit boards of its own design, with short mirror image L/R signal paths, which are populated with discrete surface-mount components. It calls these modules 'HDAMs'. These HDAMs perform exactly the same electronic function as ordinary mass-produced op-amps, but according to Marantz, its HDAMs have faster slew rates and much lower noise levels.

The CD5005 comes with a switchable standby mode that optionally switches the player into standby when you haven't been using it for a while, and in standby it draws less than half a watt.

We were ecstatic to discover that the CD5005 features several of our all-time favourite operational features. First and foremost among these is the pitch control that

allows you to adjust the pitch of any CD you're playing so that you can get it into 'tune' with an instrument you're playing along with. This is obviously very important with an instrument that's difficult to tune, such as a piano, but these days, with recording engineers fiddling with pitch themselves, it's even important if you want to play along on an instrument that's easy to tune, such as a guitar. Almost as important, the CD5005 has an A-B repeat function, so you can select a single musical phrase from within a song (track) and play it over and over. This, too, is a great learning tool for musicians. For 'whole performance' practise, the CD5005 lets you repeat a track or a whole disc (or a subset of the tracks on a disc, which you do by using the programming section). It even has delete programming, another of our favourites. Control-wise, the CD5005 has pretty much everything you could ever want on a CD player!

Sonically, it also has everything you want in a CD player, because this is one sweet-sounding machine. Nicely paced bass that goes deeper than you'll hear on any LP, a pure and exceedingly accurate midrange delivery and beautifully-extended high frequencies. Stereo imaging is precise across the entire audible range; noise is indistinguishably low. A worthy winner. More info: [www.qualifi.com.au](http://www.qualifi.com.au)

**NO HIGHLY COMMENDED PRODUCTS IN THIS CATEGORY**





CD PLAYER OF THE YEAR OVER \$1000

# Ypsilon CDT-100

Visitors to the recent Australian Audio & AV Show may have heard this superb \$29,990 example of the digital hi-fi arts playing in one of the two rooms occupied by Telos Audio Distribution. Its performance there was further confirmation of the time we spent with this Greek CD player for our high-end publication *Audio Esoterica*, where we called it “an understated yet beautiful piece of industrial design”, into which discs load via the top ‘well’ machined into the solid aluminium and stainless-steel sandwich chassis, accessing the Ypsilon-modified Philips CD-PRO 2 top-loading laser mech. A magnetic puck secures the CD in place before a heavy milled aluminium ‘lid’ covers the CD well.

Ypsilon, along with a number of high-end manufacturers of late, has chosen older non-oversampling multi-bit DAC chips as the preferred method of decoding zeros and ones, as opposed to the modern and more common Delta-Sigma variety. There is no oversampling or up-sampling here, no digital filters used, keeping the circuit simple — the company’s Chief Designer Demetris Baklavas pointing to oversampling filters as being “responsible for what we associate with ‘digital sound’ in CD playback... we use the PCM1704 in non-oversampling mode — a 24-bit DAC that accepts

the 16-bit signal in the CDT-100. A walk in the park for the DAC — the sound produced by a non-oversampling high quality multi-bit DAC chip cannot be matched in its ‘analogue like’ character by an oversampling DAC.”

Similar attention is paid to the power supplies, which use a custom-made toroidal transformer operating in low flux. The power supply for the mechanism is merely optimised, Ypsilon feeling no need for overkill there, while the power supply for the DAC chips themselves use Mundorf caps. The CDT-100’s feet are terminated with small spikes for vibration control, and Ypsilon provides neat machined two-section surface-protecting discs with small receptacle indents for the spikes. The upper section of the discs rotates to allow precise levelling of the player.

Ypsilon does have a separate DAC-100 with which the CDT-100 can be paired — connecting the output of the DAC chips through the five-pin connectors into the analogue stage of the second box. But we reviewed the CDT-100 alone, and there was no notion whatsoever that additional componentry was required — the CDT-100 impressed from the moment ‘play’ was pressed as one of the most musically satisfying players we’ve had the pleasure of reviewing. The tonal palette is profound, while the music

has an ‘ease and flow’ that will remind many of top-flight analogue rigs. As Baklavas suggests, there is zero digititis here. Male and female vocals project into the room enveloped in stunning ambience, and are accurately placed within large soundscapes. But the CDT-100 isn’t forward-sounding in any way. In fact, its front-to-back spread is one of its most developed attributes. The player simply paints a realistic and natural sonic image.

And in case all this talk of ethereal refinement and delicacy paints a picture of all-too sophisticated presentation, have no fear — the CDT-100 is as dynamic and balls-to-the-wall powerful as the best of them if the recording and music demand it.

Examine the way it has been built and you’ll appreciate its flawless assembly and uncomplicated yet skilful circuit engineering. Listen to the CDT-100 in an appropriate system of similar standing and you’ll be drawn into the music the way that few select digital disc systems can achieve.

Where the DAC-100 would take it, we can only imagine. Taken independently, however, the Ypsilon CDT-100 player is profoundly natural, powerful, tonally textured and organically resolving. It takes the CD medium, still valid, to its uttermost glorious heights.

More info: [www.telosaudio.com.au](http://www.telosaudio.com.au)

NO HIGHLY COMMENDED PRODUCTS IN THIS CATEGORY

# AFFORDABLE HIGH-END AUDIO



The new Musical Fidelity M6si integrated amplifier with increased power, more inputs, completely new internals and greatly improved technical and sonic performance. Featuring two completely separate and independent mono power amps and preamp with separate regulated power supply. The 220 watt per channel M6si has a new MM/MC phono stage, 24bit 96kHz asynchronous USB input, balanced XLR input and Home Theatre bypass facilities.

**MUSICAL FIDELITY**



New Krell Foundation 7.1 Surround Processor and Krell Vanguard integrated amplifier. The Krell Foundation features 10 x HDMI inputs with Intelligent switching, balanced audio outputs, automatic set-up and room EQ and Krell's legendary robust hardware. The new Krell Vanguard 200 watt per channel integrated amplifier with a massive 750A toroidal transformer and Class A preamplifier featuring Krell Current Mode technology. An optional field-installable digital module with USB, HDMI, Coaxial and Optical inputs plus Ethernet and apt-X Bluetooth streaming is planned.

**KRELL**  
THE LEADER IN AUDIO ENGINEERING



The new Focal Aria 900 loudspeaker range. Affordable High – End designed and made in France. Featuring Focal sandwich cone technology composed of natural flax-fibre cones and new TNF Aluminium/Magnesium inverted dome tweeters with Poron suspension. Carefully designed crossovers and Walnut or Black High Gloss cabinets with a glass top surface and leather – finish front panel.

**FOCAL**  
THE SPIRIT OF SOUND



The new Peachtree Nova 220SE dual-mono balanced 220 watt per channel stereo integrated amplifier. Featuring 24 bit 192 kHz asynchronous USB input, Optical and Coaxial inputs, Pure analogue input, Audiophile quality headphone amplifier and selectable triode tube buffer.

**peachtree audio**





BLU-RAY PLAYER OF THE YEAR

# Panasonic DMP-BDT460

If you're about to buy a Blu-ray player, be aware that the whole format may change late next year to introduce the ability to play back a new type of 4K (Ultra HD) Blu-ray disc. This will require a whole new type of Blu-ray player, and of course also a system with a 4K screen or projector, so you may not be too concerned about this just yet. But in the interests of future-proofing our readers, we do think this to be a time where we might sensibly recommend a relatively affordable Blu-ray player rather than a top-notch design that will be superseded in a year or so.

Thankfully Panasonic has just the right player new to the market — our full review appeared last issue. The DMP-BDT460 plays Blu-ray discs, DVDs and CDs, but it also includes proper network abilities, with a web interface and access to Panasonic apps which give it various internet functions. Plus it supports media playback from USB and SD cards. It also offers an early *soupeçon* of 4K content through the rare feat of being able to deliver still photos at a real 4K resolution, not 1080p upscaled to 4K. And all this for \$279!

Indeed you can set this player to upscale everything to 4K before passing the signal via HDMI to a 4K screen. This makes little sense to us, since your 4K screen will be able to do the upscaling itself, and probably more suitably for its own purposes too. So just

keep Panasonic's player delivering its superb picture quality from your discs — it excels even with Australian DVDs and the few (but important e.g. *Pulp Fiction*) Australian Blu-ray discs that run at 1080i/50. With this player you can at any point hit the 'Option' key on the remote, arrow down to 'Picture Settings' and from there set 'Progressive' to 'Auto', 'Film' or 'Video'. 'Video' assumes that the fields in interlaced video are displaced in time with respect to each other, so it always applies good quality motion-adaptive deinterlacing, bobbing the moving parts of the picture and weaving the fields together in the static parts. 'Film' assumes that the content is progressive, so it just weaves the two fields together. This is suitable for the great majority of Australian DVDs. If you set it wrongly, you will soon tell by the horizontal combing on moving parts of the picture. ('Auto' attempts to work out the appropriate setting from moment to moment. This it did quite well, but imperfectly with our usual selection of torture tests on both DVD and Blu-ray.)

All that, combined with Panasonic's usual high standards for decoding compressed video and scaling to 1080p, makes this player, on the video front, as good as any in existence.

Apart from the lack of an iOS/Android control app, the network features are top-notch. The unit will send photos out with

4K resolution if your system supports it, and really, you haven't *seen* photos on a screen until you've seen them in 4K. Audio is also well-supported — high resolution and even multichannel FLACs, plus AAC, MP3, WAV and WMA, and videos in 1080i/50 and 576i/50 MPEG2 video, and MKV movies, and .ts files with H.264 and MPEG2 content, although during video playback of files you don't get the excellent picture control functions provided when you're spinning discs.

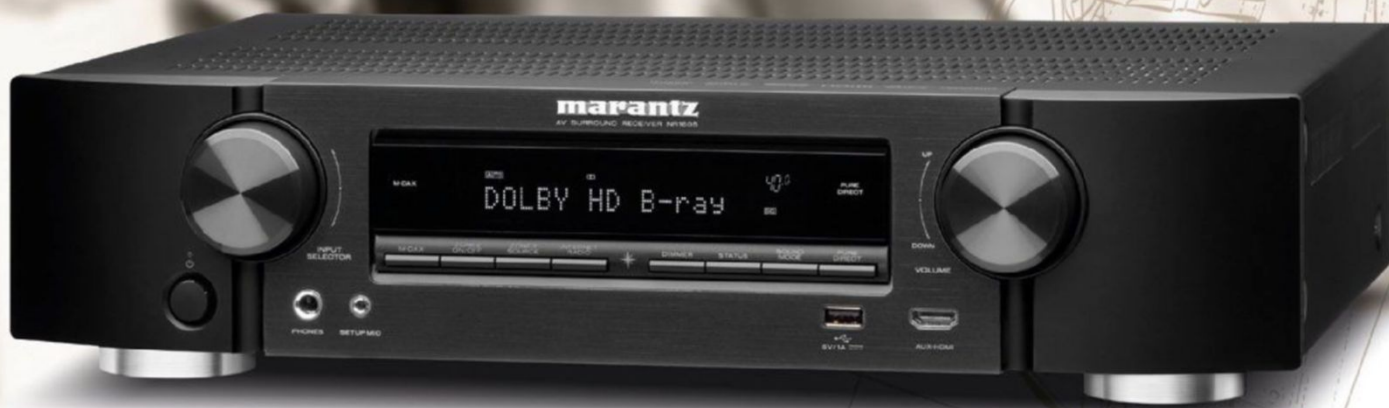
There's also a Media Renderer function through the Home Network option, which allows you to use a third-party DLNA controller app on iOS or Android to select photos, video or music you want played and then stream them to the Panasonic. Miracast is also supported from Miracast-compatible phones or tablets. The Panasonic will decode all these and deliver them as audio and video from its HDMI outputs (two HDMI outputs are provided — you can set one of these as audio only and plug it into your receiver, with the main one straight to your TV).

So for your \$279 outlay you're getting a Blu-ray, DVD, CD and file player with network functions and top-notch image quality... even if you do go 4K in a year's time for your main AV system, you can shift this player into another room as a local and networked source.

More info: [www.panasonic.com.au](http://www.panasonic.com.au)

NO HIGHLY COMMENDED PRODUCTS IN THIS CATEGORY

the sound of  
craftsmanship



### The art of AV Receivers

With WiFi and Bluetooth connectivity, the NR1605 AV Receiver lets you enjoy all your digital files - wherever they are. And with 4k Ultra-HD you get breath-taking pictures, razor-sharp lines. And for those preferring a more bolder design, the same goes for the SR5009, the SR6009 and SR7009. Enjoy!



AV RECEIVER OF THE YEAR \$1000-\$2000  
**MARANTZ NR1605**

**marantz**

[www.marantz.com.au](http://www.marantz.com.au)



**SR5009**  
Network AV Receiver with  
Wi-Fi and Bluetooth



**SR6009**  
Network AV Receiver with  
Wi-Fi and Bluetooth



**SR7009**  
9.2 Network AV Receiver with  
Wi-Fi, Bluetooth and Dolby Atmos

because music matters



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## PERSONAL VIDEO RECORDER OF THE YEAR

# Humax 4tune

**R**egular readers may not be surprised to find our cover star from last issue taking out the PVR of the Year award — the \$649 Humax 4tune (also known as the HMS-1000T) makes TV recording a breeze, while adding so many extras that Humax is perfectly justified in labelling it as a 'Home Entertainment Server'.

At its heart, though, it is a solid PVR with four TV tuners (double the usual), so you can record four channels while watching a fifth. But once it's connected to your home network by Ethernet or Wi-Fi, you can also stream additional live channels or recordings to an iPad or Android tablet — this is very handy for simultaneously playing different shows for multiple users in the home, or even for, say, keeping an eye on a sports match on the iPad

while enjoying the evening movie. The Humax will also serve up its recordings via DLNA or FTP to receiving devices elsewhere in the home (archiving your recordings is therefore easy), and can play files the other way from network shares, for which it is blessed with excellent file-type handling.

There are three iOS/Android apps for the 4tune — these allow you to watch live and recorded programs, and to schedule recordings from your tablet. The TV-based guide is not hard to use, but the tablet version is a joy, scooting through a week of programming to set series or single records. By logging on to myhumax.net you can also set recordings from anywhere on earth, using a web browser.

There are a good number of TV apps for accessing online content, but the pride of

place here is catch-up TV. This machine is compatible with the HbbTV system required for FreeviewPlus (it is compatible not certified, which we think is better, since Freeview certification still requires archiving and ad-shipping to be disabled), so all available catch-up TV services can be accessed direct from the TV channel by pressing the green button.

With easy set-up, even the ability to send its audio via Bluetooth, Humax has delivered a hugely capable PVR with four tuners and a terabyte of storage as the entry point, and with huge additional abilities. It's not alone in raising specs to new levels (see our Highly Commended) but it wins out by setting a new paradigm for PVRs while keeping things easy for all the family to use.

More info: [www.humaxdigital.com/au](http://www.humaxdigital.com/au)

## HIGHLY COMMENDED: BEYONWIZ T3

Our Highly Commended is the Beyonwiz T3 PVR, the '3' being significant in that it has three digital tuners rather than the usual two. Indeed with the addition of an optional USB tuner (\$49.95) you can record four stations at once, and up to two channels from each, for a total of eight. An octo-recorder! (In fact, during our testing, we got up to recording 14 programs at once from three multiplexes and things were still going fine.)

So this is another 'power PVR', this one using Linux as its operating system, and it's good for nerds — you can customise skins, and various utilities can be installed in addition to those which come as standard: web browser, Flickr, access to publicly available webcams,

Last.FM, SHOUTCast, YouTube, AirPlayer (a DLNA rendering device), Gmail, the Opera web browser and weather. The T3 connects to your network via Ethernet only; Wi-Fi will require the additional of a dongle.

It also has the HbbTV compatibility that should allow the same FreeviewPlus catch-up TV as the Humax above, though this wasn't yet operational when we reviewed the Beyonwiz.



It also supports the excellent IceTV guide and online scheduling; a three-month subscription is included for free.

We found the Beyonwiz T3 to be highly reliable in operation and extremely flexible both in use and in the various models Beyonwiz has made available — a 'barebones' model with no hard drive is \$499 (you plug in an external drive for recording), while there are also 1TB, 2TB and 4TB versions for \$649, \$699 or \$849 respectively.

More info: [www.beyonwiz.com.au](http://www.beyonwiz.com.au)



DAC OF THE YEAR UNDER \$2000

# Musical Fidelity M1SDAC

Sometimes you plug up a piece of kit and know immediately that it's made a difference. Such was our reaction to Musical Fidelity's usefully compact M1SDAC, currently available at \$1299 and clearly over the hump at which budget DACs turn into something special.

There's more to it than mere DACdom, however — the inputs lend it almost pre-amp status, offering two electrical, one optical and one XLR/AES balanced digital input, USB-B for playback from computer, and even two line-level analogue inputs. There's also built-in Bluetooth, and as with last year's

Highly Commended winner (the company's M6DAC), this input is capable of far better sound than Bluetooth usually achieves. This also includes the Bluetooth aptX codec if you have an Android phone that supports it.

There are also digital outputs, should you need them, but we fed the analogue outputs through to our pre-power amps (coincidentally also Musical Fidelity) and the result was a delight — this is a DAC that had us jumping from file to file at first, hearing how everything was gifted a depth and life that indicates speed and detail together, the successful delivery of maximum information from the files

available, and also a musicality that, in the longer term, had us leaving the M1SDAC in our system both as a reference against rivals and as a preferred leisure activity for our rare free hours. The USB and coaxial inputs cover up to 24-bit/192kHz (96kHz via optical), and our high-res collection sound suitably superb and highly dynamic. But even with grungier files playing out of iTunes, what Musical Fidelity has achieved with the 32-bit Delta-Sigma dual-differential 64x oversampling here most definitely deserves an award. More info: [www.audiomarketing.com.au](http://www.audiomarketing.com.au)

## HIGHLY COMMENDED: DENON DA-300USB

While there's absolutely no shortage in this world of desktop USB DACs with headphone outputs, few come from major global brands, so it was great to see Denon harness its decades of DAC experience to deliver this neat little DA-300USB at a useful price of \$799. It can sit upright or flat as it undertakes its conversion, which is good up to 24-bit 192kHz for FLAC, WAV and ALAC as well as the usual suspects — notably it can also handle DSD 2.8 and 5.6 files. We listened mainly using its USB input straight from computer, but in addition it has two optical and electrical digital inputs, so it can act as a hub for a good few digital

devices, either sending its analogue output into your existing hi-fi, or to its headphone output which is controlled by the marvellous knob on its front panel. The conversion used is very similar to that in Denon's CD and SACD players, and the DA-300USB certainly performs beyond the pack of DACs around this price, even comparing well with the pricier Musical Fidelity above — just a shade less depth, a little softer and smaller in space, but still dynamic, clear, and with plenty of power behind its headphone socket for those seeking solo listening sessions. It's a delightful little DAC in every way. More info: [www.qualifi.com.au](http://www.qualifi.com.au)







## DAC OF THE YEAR OVER \$2000

# Trinity DAC

Physically the Trinity DAC is a deceptively unassuming component, especially for a unit retailing at \$59,000. But don't misinterpret this external message of minimalism. Inside its slimline casework, milled from solid aluminium, lies what is claimed to be a unique digital-to-analogue converter technology devised by CEO and engineer Dietmar Bräuer. He calls it LIANOTEC, and it begins with the idea of eight paralleled DACs — in this case the Burr Brown PCM 1704 — implemented in an analogue oversampling circuit.

"It's a unique topology that improves all the parameters of a D/A converter," claims Bräuer. "It's a topology that is both impulse-optimised and frequency response-optimised, since it has an ideal impulse response and, therefore, represents the epitome of interpolation techniques." The technology also removes

the need for a low-pass filter with its inherent phase and ringing distortions.

Further refinements have been implemented in the way the Trinity DAC handles USB signals, the careful use of a top-tier oscillator reducing jitter to insignificant levels — quoted at a mere 28 femtoseconds.

The component itself is constructed from a block of CNC-machined aluminium anodised in black, its thickness, solidity and circuit board layout all aimed at minimising and isolating componentry from mechanical vibrations, as are the three large chromed feet with a receptacle for fitting a ball bearing.

Connectivity includes inputs for one optical and two electric digital inputs, plus the USB. As one might expect at this price level, only XLR connectors are provided for balanced analogue outputs, while two BNC

connectors offer master clock outputs. The Trinity DAC is capable of supporting playback for audio files of between 44.1kHz and 192kHz sampling rates and 24-bit resolution.

The tech talk is all very well, but it's the extraordinary sound of the Trinity DAC that wins our award — textures and more textures in a broad tonal palette giving instruments and vocals a centre-stage presence rarely heard, instruments having riveting resolution and superlative separation, while the Trinity pulls as much ambient room and recording venue information as we've ever heard from the zeros and ones of our files and CDs

Whether rendering red book or high-res files, the Trinity DAC is an advanced, innovative and highly engineered instrument for digital playback. It's positioned at the highest levels currently achievable.

More info: [www.zensatiaustralia.com](http://www.zensatiaustralia.com)

## PORTABLE DAC OF THE YEAR

## HIGHLY COMMENDED: AUDIOQUEST DRAGONFLY 1.2

# Cambridge Audio DACMagic XS

We have a special category here for portable DACs, with our Winner and Highly Commended both being tiny units that plug into the USB socket of a laptop (or home computer) to provide a minijack audio output, aiming to vastly improve on the sound coming from said computer. Both work, and how. Computers are built to a price, their audio circuits invariably kept cheap as chips, so intercepting the signal digitally and using an external DAC can yield a great improvement. The \$199 Cambridge uses the ESS Sabre ES9023 DAC, packaged into a slim, lightweight, brushed aluminium casing with a useful micro-USB to regular USB adaptor cable. It supports up to 24-bit/192kHz audio (but no DSD), and delivered tremendously high output levels with great musicality, not to mention insignificant noise at -102dB(A) and effectively dead flat frequency response. For us, it just edged it over the DragonFly. More info: [www.synergyaudio.com](http://www.synergyaudio.com)



At the same price, and looking a little sexier (the logo lights up in five different colours depending on the sampling frequency) is the AudioQuest DragonFly 1.2, also \$199, and also with a "24-bit ESS Sabre conversion chip" (the model is not here specified), and with similar noise levels and frequency response, though we found that its measurements varied more than the Cambridge's under changing circumstances. It serves exactly the same purpose — plug it into your computer's USB slot and enjoy a better headphone output. It claims to work slightly differently in some ways, notably volume control — it has no buttons at all, and recommends having your software program set to maximum and then varying your computer's overall volume control, as this will, says AudioQuest, not affect the digital signal but will pass the control information to an analogue-domain volume control built into the DragonFly. We have our doubts about this, but the result was certainly excellent, with fine sound from all the headphones we tried and through via a cable into our main hi-fi. It's good to 24-bit/96kHz (no 192kHz or DSD), and installation was trouble-free. If you're auditioning one, be aware AudioQuest reckons it takes 15 minutes to warm up. More info: [www.ambertech.com.au](http://www.ambertech.com.au)





## SYSTEM SOLUTION OF THE YEAR

# Cambridge Audio Minx Xi

**N**etworking, streaming from smart devices, online music services — they're all built into the \$999 Cambridge Audio Minx Xi. The amplification is on board as well. You just add speakers as a minimum, additional sources if you wish. And the result is real hi-fi — these are good amps, so they can support a decent pair of speakers for a solution that will blow away any all-in-one wireless speaker on the market. To put it simply, this is hi-fi made easy.

The Xi is smaller than separates — 27cm wide and just 9cm high, our sample in a stylish white gloss case with black inset front and back panels. On the front panel are eight buttons plus a turn-and-select knob, plus USB and minijack inputs, a minijack headphone output, and the power switch. You also get a fullsize remote control with these and additional controls, and there's also Cambridge Audio's own iOS/Android control app, StreamMagic

Round the back are two pairs of analogue RCA inputs, one each of optical and electrical digital inputs, a second USB slot, Ethernet in, and two slots for dongles, one for Bluetooth, one for Wi-Fi (including 802.11n). Both dongles come as standard — one of our few negatives on the Xi is that the Bluetooth one doesn't support the AAC codec, only the grungy old SBC, or aptX (good but still not common on phones). But the wealth of other inputs, plus the ability to stream over your network from shares (using the StreamMagic app makes this easy, and high-res files are supported) means a Xi-based system can be complex or very simple — stick with Bluetooth, network streaming and the built-in internet radio, Aupeo! and others, and the only thing you'll be wanting to add is those speakers. This is true hi-fi loaded with new-media abilities, delivered in a system with substantial musical credentials.

More info: [www.synergysaudio.com](http://www.synergysaudio.com)

### BUYING ADVICE

#### SYSTEM SHOPPING

There are benefits and penalties when buying a complete system from one manufacturer — those good at making electronics may not be good at speakers, for example. So in this 'System Solutions' category we include products that do nearly everything (just add speakers, say) in addition to those that really are plug'n'play solutions for an entire entertainment system in one.

## HIGHLY COMMENDED: PANASONIC SC-NE5DB WIRELESS SPEAKER SYSTEM

The headline here is that this \$549 system from Panasonic achieves very enjoyable sound. But we don't quite understand why the company calls it a 'wireless speaker system' — it has a CD player, digital radio, FM radio and an iPhone dock in the small control unit, then it adds AirPlay, Bluetooth and DLNA streaming abilities, plus a minijack input and a USB socket for an iPad. We make than nine different ways to access music — a system solution indeed!

The two units communicate wirelessly, the idea being to position the main speaker unit

(57cm wide) wherever convenient and keep the smaller control unit nearby — each requires a mains connection. The sound is obviously limited in size but well balanced and capable of tweaking via various (perhaps too many) EQ options, so that we enjoyed the results even

for longterm casual listening. We preferred its sound in free space, but you can hang it on a wall — only the larger unit, however, since the CD player loads into the back of the control unit. The streaming all worked well for us except DLNA, which was hard to control given the unit's one-line display, and even using an app to throw files across there was support for very few filetypes (no AAC, no FLAC). This aside, Panasonic has delivered a neat and highly capable little system here at an impressively low price. More info: [www.panasonic.com.au](http://www.panasonic.com.au)







WIRELESS MULTIROOM PLAYER OF THE YEAR

# HEOS 5 & HEOS Amp

The arena of Wireless Multiroom has gone bananas in the last few months, with the arrival of multiple systems to rival the incumbent, Sonos. HEOS by Denon has impressed us for several reasons. It comes from a company with a 100-year heritage in music, promising suitable attention to musical performance, but much of the streaming technology within was developed here in Australia, originating with the 'avega' wireless speakers that were developed here around a decade ago (we have the full story of this on AVHub.com.au). We like the look of the HEOS units — simple but stylishly angular, available in black or white. And the app is at the heart of HEOS is very simple, easy to use and groups HEOS units neatly for multiroom or individual playback.

HEOS currently offers network streaming via DLNA, Pandora and TuneIn internet radio, plus Spotify and Deezer via subscription. The network streaming is rather limited in filetype (no FLAC, no high-res), so the focus of HEOS is firmly on streaming, though there is a USB and minijack input on each HEOS unit, which can also be shared to other units.

The range currently includes three wireless speakers, an amp, a link (to bring HEOS streaming to an existing hi-fi) and a Wi-Fi extender, and we have chosen to award two of these units which particularly impressed us. The first is the HEOS 5, the middle of the three wireless speakers, around 30cm wide, and selling here for \$599. Its four amplifiers, stereo tweeters, midrange drivers and passive radiator produce a sound impressive large for

its size, able to fill a small-to-medium room with no problems, and to do so with enjoyable and powerful music. If the bass is a little high for you, tame it using the bass/treble adjustments built into the HEOS app.

The HEOS Amp (\$799) has no speakers — it is a receiver to which you add speakers of your choice, and its digital amps outperform those of the competitors we've heard so far. It's also something of a hub for other gear — two analogue inputs, one optical and a USB. It works great as a TV plus music system.

One important note: control is entirely by smartphone or tablet running the HEOS app, you can't play anything without one (there's not even a PC/Mac software controller). That's how very modern HEOS is. More info: [www.heosbydenon.denon.com/au](http://www.heosbydenon.denon.com/au)

HIGHLY COMMENDED: BOSE SOUNDTOUCH PORTABLE • PURE JONGO T6



Bose is now in its second iteration of the SoundTouch system which brings multiroom and streaming to many of its products. We like it — six presets mean you can start music playing immediately before turning to app or

PC/Mac control, and we particularly love the \$549 SoundTouch Portable, which delivers the sound of Bose's longrunning dock products with all the streaming abilities of SoundTouch (which includes AirPlay) and battery operation as a big bonus. More info: [www.bose.com.au](http://www.bose.com.au)

Pure Jongo is the multiroom wireless system from the company known best for digital radios. While we find the control system a bit flaky (you often have to power up the units you want to use before starting), we have been particularly impressed by the newest and largest Jongo speaker unit, the \$599 T6, pictured here in vertical mode and as a pair, because this is a model which can be 'paired' to play in stereo.



This doubles up the T6's already enjoyable sound into something really powerful, filling the largest of rooms with sound as good as you could ever hope for from such a system. Jongo units include Bluetooth and auxiliary inputs, and while codec support could be better, you do get a whole range of colourful options to choose from. More info: [www.pure.com/au](http://www.pure.com/au)

Beyonwiz T3  
**BACK** ←  
**FROM THE FUTURE**



## A truly next generation PVR...



1 2 3

### Triple Tuner

Australia's First Triple DVBT HD Digital TV Tuners allowing you to record up to 8 programs at the Same Time... WOW!

4



**Optional 4th Tuner**  
 Transform your T4 into a quad tuner by adding our optional USB Tuner. Now you can record 8 channels at once from 4 different networks.

REC X8

The T3 can Record 8 channels at the same time from 3 different networks. Add the optional 4th tuner and you can record from 4 networks. Can your PVR do that?



**Network Streaming**  
 No more fighting over the remote control! Stream and View Multiple Live TV Channels and recordings over your Home Network to your Smart Phone, Tablet or PC.



3 Months Free

The T3 is IceTV ready. With IceTV you can Set your Recordings from anywhere with their Free iPhone, Android or Windows Apps.



PLEX xbmc

### Plugins and Addons

There are many Plugins and addons available for your T3 including iptv plugins, skins and Media clients such as Plex. Your T3 can even act as a Live TV and EPG server for XBMC.

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SOUND+IMAGE AWARDS 2015

# SPEAKERS & AMPLIFIERS





LOUDSPEAKERS

OF THE YEAR UNDER \$1000

## B&W 685 S2

When B&W released the original Model 685s more than seven years ago, they hit the sweet spot on any number of counts: they were compact, sounded fabulous, and you could buy a pair for under a grand. Plus, of course, there's the fact that they were built by one of the world's best-known and most famous loudspeaker manufacturers. So, needless to say, we were expecting great things of its successor (also under a grand at \$999 the pair). We were not disappointed!

The Series 2 is also a two-way, bass-reflex design, but it uses a bass/midrange driver that is brand-new for B&W (the cone is

made from the company's trademark woven Kevlar material) and an equally new 25mm aluminium-domed tweeter that's iso-mounted on the front baffle so its output can't be adversely affected by cabinet vibrations.

Our first impression of the B&W 685 S2 was of its hugely engaging sound quality that had us instantly relaxing and enjoying the music — particularly the breezily airy high-frequency delivery that, while bright and crisp-sounding, was not overly so in either department. The midrange was equally bright, and so bouncy that the energy in the room was palpable. It's rare to hear such dynamics from such small loudspeakers. Tonal balance across

the upper bass, midrange and lower high-frequencies is impressive, with the transition from the upper mids to the lower highs being handled totally transparently. We marvelled at the sound of Tiny Ruins' album, 'Brightly Painted One'. Fullbrook's vocals are perfectly pitched, with her acoustic guitar elegantly weaving its sound through the lyrics, backed by tasteful percussion and a perfectly recorded bass, and the B&W 685s sounded fabulous throughout the entire album. B&W's 685 S2 is not only a significantly better speaker than the original, it's also one of the best small two-way designs we've ever heard.

More info: [www.convoy.com.au](http://www.convoy.com.au)

### HIGHLY COMMENDED: FOCAL CHORUS 706 • Q ACOUSTICS CONCEPT 20



It's a sign of how tough the competition is in this category that the magnificent Focal 706s, which were good enough to be awarded a Gold Medal from France's most prestigious classical music magazine (*Diapason*) were here pipped

at the post by the slightly more expensive B&W 685 S2s. But sound quality is very personal, so you might consider that the lower price (\$899 as pictured) of the Focal 706, the more classical cabinet design... and that beautiful walnut wood veneer might have you buying a pair of Focal 706s instead. In any other year, the Focal 706 might well have taken the prize! More info: [www.audiomarketing.com.au](http://www.audiomarketing.com.au)

UK magazine *WHAT HI-FI?* reckons that Q Acoustics' Concept 20s are, for their price, the best speakers on the market today. *Australian Hi-Fi's* Greg Borrowman wrote that he'd never heard "a pair of speakers at the same



price that sound anywhere near as good". The speakers use a unique 'Gelcore' material in their cabinets, and have an iso-mounted 25mm tweeter. Though they're not the best in this category, they're unbeatable at their \$699 price. More info: [www.westan.com.au](http://www.westan.com.au)





## LOUDSPEAKERS OF THE YEAR \$1000-\$4000

# Krix Acoustix Mk2

**K**rix's Acoustix Mk2 speakers are stand-outs for any number of reasons. One is that despite their modest size, they deliver bass that has people looking around for floorstanding speakers. Another is that they will deliver true hi-fi sound, even if they're mounted inside a cabinet. Yet another is that although they're great stereo speakers, their driver layout means that all you have to do for home cinema use is add another pair plus a Krix Graphix centre-channel, to guarantee truly seamless audio 'pans' when watching 5.1-channel movies.

The Krix Acoustix Mk2 is essentially a perfectly symmetrical three-driver, two-way bass reflex design with twin front-firing ports. The driver arrangement is an 'MTM' layout. The bass/midrange drivers use fibre-reinforced moulded-polymer baskets to support doped paper cones via a rubber suspension. Each one is fitted with a 25mm diameter voice coil wound around an aluminium former that's driven by a large,

vented magnet assembly. The tweeter is a 25mm dual-concentric diaphragm tweeter with wave-guide central plug and ring-formed absorption chamber — often referred to as a 'ring radiator' design — and a high-strength neodymium drive magnet. The crossover is made in-house by Krix itself. (Krix also makes the Acoustix Mk2's cabinets in-house.)

One of the several advantages of the MTM design in its two-way implementation is that because the tweeter is so close to the bass/midrange drivers, you find that even when listening very close to the speakers you are effectively hearing that acoustic ideal of a 'point source', so sounds do not appear to 'move' vertically depending on their frequency, as they can with larger, multi-driver systems, which makes them ideal for near-field listening and/or small room use. For our listening sessions, we used the speakers just as we would conventional two-way speakers, and the depthiness and bass power afforded by the dual bass/mid drivers were exceptional: they really punched

above their weight. We were hearing far better, far deeper bass than we've heard from any small two-driver two-way system.

Higher up in the audio band, the Acoustix Mk2s became even more impressive: we were spell-bound by the clarity of the sound and the speakers' ability to separate not just live harmonies but also multi-tracked vocals. We loved the high frequency sound too: the glockenspiel on Archer & Light's 'Our Love is Confetti' was beautifully rendered with crisp strikes and smoothly decaying notes. Very clean, very pure and nicely integrated with the top end of the bass/mids... a difficult trick to pull off. The soundstaging is outstanding. You get not only an accurate picture of where all the performers are standing, but also of the stage depth, resulting in a totally immersive listening experience.

If you're looking for big sound from a pair of bookshelf speakers, it doesn't come any bigger than from the \$1195 Krix Acoustix Mk2.

More info: [www.krix.com.au](http://www.krix.com.au)

NO HIGHLY COMMENDED PRODUCTS IN THIS PRICE CATEGORY



## LOUDSPEAKERS OF THE YEAR \$4000-\$20,000

# Yamaha Soavo NS-F901

**Y**amaha is a unique audio company — what other can boast to cover the complete chain from music making to music reproduction? Many of the world's most famous musicians use Yamaha instruments to express their art, while the studio that records their creativity is likely to feature many of the company's professional audio products.

Take that one step further into the home environment and you have a wide choice of Yamaha fare from portable audio through to award-winning home cinema gear and — recently given new emphasis — high quality stereo. And indeed high quality stereo was in Yamaha's dynamic engineering team's agenda

when they designed the company's flagship speaker, the Soavo NS-F901.

Yamaha's considerable R&D power has resulted in a speaker that features proprietary drivers from tweeter to midrange to woofer in a beautifully sculpted enclosure finished in a stunning high-gloss, courtesy of Yamaha's own piano-making division. Ditto for the sonic profile which was achieved after extensive listening sessions in a superb custom-designed auditioning studio, with the support of the same piano division.

All this expertise has paid huge dividends. The \$5999 NS-F901 speakers' sound is indeed faithful to the instruments its maker so skilfully produces. There's a realistic dynamic expres-

sion and detail retrieval that competes with much more expensive designs. The speaker enclosure's upper section, with its edge-cut profile, permits a dispersion that not only creates a massive soundstage but also inhabits the soundfield with accurately-placed images of individual density. And the Soavo NS-F901 is not a lone beacon; Yamaha offers a range of matching speakers, including a centre, that allows a multi-channel set-up with devastating movie performance.

For these reasons alone the guernsey for the best speaker in this category is confidently awarded to this Yamaha triumph. Oh, and did we mention that gorgeous piano finish?

More info: [au.yamaha.com](http://au.yamaha.com)



## HIGHLY COMMENDED: AUDIO PHYSIC VIRGO 25 PLUS



Back in 2011 Audio Physic was celebrating its 25th anniversary by introducing a commemorative speaker at that year's Consumer Electronics Show in Las Vegas.

The world's press embraced the Audio Physic Virgo 25 and acclaimed, among other things, its superb tonal qualities, its imaging prowess, and the skill by which the designers had arrived at the complete package. Now, in its 'Plus' iteration, the new design aims to enhance its predecessor's considerable music-making skills.

And the designers have certainly met with success. The Virgo 25 Plus is a stunning new speaker featuring Audio Physic's own driver designs as manufactured by the best OEM companies — including a most unusual and extremely competent tweeter arrangement — and with an attractive form in very high quality finishes. But how does it sound? Well, according to the judges, the Virgo 25 Plus "excels at all the soundstage trickery but immediate impressions were also of a midrange and top-end rich in detail and textures and very adept at separating dense musical mixes" and they continued "...tonally too, they are spot on with accurate timbre and with that unusual tweeter shining in its detail and resolving prowess."

The \$18,500 Audio Physic Virgo 25 Plus (just over \$20,000 in premium finishes) is an outstanding sonic performer building on the anniversary original to even greater effect. Congrats!

More info: [www.radianceav.com.au](http://www.radianceav.com.au)

## HIGHLY COMMENDED: JAMO C 109

Jamo's new C 109 floorstanders, the \$5490 flagship model in the company's newest Concert Series of loudspeakers (see *News*), are truly the result of international co-operation, with Jamo's new owner (Klipsch US) commissioning world-renowned British designer Kieron Dunk to deliver the industrial design that resulted in the gorgeous curved sides and quirky outrigger stabiliser feet, and US loudspeaker designer David Wilkes Jr. to design not only the drivers themselves, which are new for Jamo, but also the system itself. The speakers are built in China, in Jamo's own factory. The C 109 is a four-driver, three-way bass reflex design with a decoupled tweeter. We're great fans of decoupled tweeters here at *Sound+Image*, because in all the implementations we've heard, tweeters that are isolated from the speaker cabinet always sound better than when identical tweeters are coupled to the cabinet — it's all to do with controlling unwanted vibrations. In the case of the C 109, the tweeter that's being decoupled is a 25mm soft-dome design that benefits from moderate horn-loading... a Klipsch trademark. Crossing to the tweeter is a 178mm diameter dedicated midrange driver. Bass is delivered by a pair of 178mm-diameter bass drivers with composite fibre cones whose output is augmented at very low frequencies by a rear-firing bass reflex port. Jamo's Concert C 109 is an exciting, highly dynamic design that couples high efficiency, and high power-handling capacity with very high sound quality. More info: [www.qualifi.com.au](http://www.qualifi.com.au)





## LOUDSPEAKER OF THE YEAR OVER \$20,000

# Kyron Audio Kronos

**T**hese speakers won Kyron Audio a joint 'Best Sound of Show' award from organisers the Chester Group only days after our own award, plus an online accolade from *Stereophile*'s Michael Fremer who headlined a comment piece after the show with "Is Kyron Audio's Kronos the Best System You Will Ever Hear?"

The Kronos is indeed a system rather than just speakers — the 'package' includes the two speakers and a sizable electronics 'control' unit with the bulk of a large Class-A amplifier — and with an equal amount of heatsinking. The all Kyron-made cabling is also included. Bear all this in mind when considering the \$82,225 (plus options) price! All you need add is a source.

The control unit is the 'brain' of the Kronos system and includes six dedicated channels of Class-D NCore amplification from Hypex (the NCore variation of Hypex is considered by many audio enthusiasts to be the cream of the Class-D crop). A DEQX processor acts as the preamplification stage and DAC, providing three-way DSP transducer correction, linear phase crossover division, time alignment and 10-band room correction equalisation. Power rating is a healthy 1200 watts per channel.

The speaker design is, of course, notable in being a box-less dipole design. The Kronos is a three-way with twin 12-inch Acoustic Elegance drivers, handing over to a seven-inch

neodymium dipole midwoofer and up to a pair of ring-radiator tweeters (one facing forwards, one backwards). Theirs is an effortless sound, utterly real, no sense of being created or coming from a particular location, yet with needle-sharp soundstaging and dynamics that can shake you with shock. And remember — no additional amps or cabling required.

So they look stunning, the engineering and tech is meticulous, they're Australian through and through — and they cap it all by being among the very best speakers we've ever heard. A unanimous winner among our judges, we congratulate Kyron Audio on this product for the music lover and audio enthusiast alike. More info: [www.kyronaudio.com.au](http://www.kyronaudio.com.au)



## HIGHLY COMMENDED: WHATMOUGH SIGNATURE PROGENY



As the name infers, the Whatmough Progeny is a direct lineal descendant of this Australian company's flagship speaker the Paragon, the ultimate statement by the late great Colin Whatmough. The Progeny is not only 'more compact' — it's also considerably more economical and, even better, it sounds very nearly as good. Like its forbear, it is a full three-way passive bass reflex loudspeaker augmented by an active sub-bass enclosure — so there's one driver you can't see, a 250mm-diameter sub-bass driver inside the cabinet, powered by a 250W Class A/B amplifier.

Unlike the Paragon, however, the somewhat smaller stature of the Progeny means that Whatmough has been able to deliver each channel completely self-contained in its own cabinet. And what a cabinet! Our review sample came in a stunning, super-glossy Ferrari red lacquer finish, but Whatmough offers any painted finish, any real timber veneer finish, even a part-painted/part-veneered cabinet.

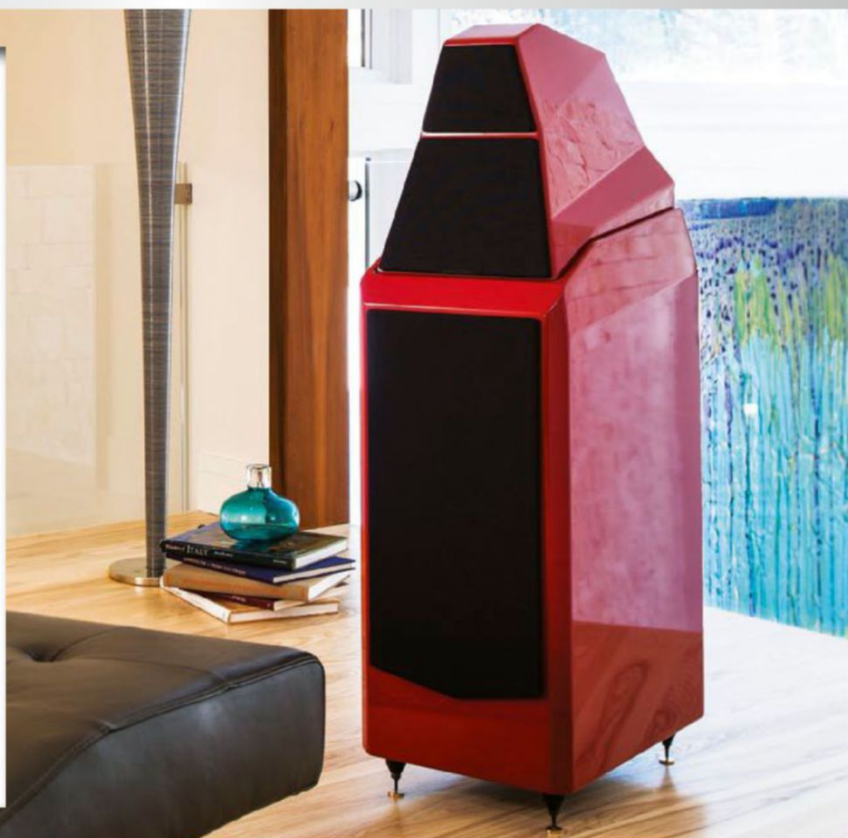
Your reward for investing \$28,000 is superb performance. As a complete speaker system, it didn't have a weakness anywhere. The upper bass segued impeccably with the subterranean-deep sub-bass module, imparting speed and enthusiasm to any rhythm section, before handing over equally seamlessly to the midrange driver's detailed, superbly linear and unrestrainedly dynamic sound, while the Revelator tweeter is indeed a revelation. Quality throughout.

More info: [www.whatmough.com](http://www.whatmough.com)

## HIGHLY COMMENDED: WILSON AUDIO SASHA SERIES-2

As stellar as Wilson Audio's Sasha Series-1 was (and it really performed well in all parameters), the Series-2 travels past that horizon and into a sonic landscape that falls in line with the expanding Wilson Audio 'family' sound. Where the previously-used Focal tweeter was an instrument of high resolution that exposed all manner of inadequacies in accompanying hardware *and* software, the new doped-silk Convergent Synergy Tweeter is a more forgiving device that, remarkably, still manages to retain the perceived resolution, detail and dynamic contrast of its predecessor. The bespoke composite midrange driver is retained, as are the twin 200mm Scan-Speak bass drivers, albeit in a newly reinforced 'X' material cabinet. Other changes include further time/propagation alignment with a step device as on the company's Alexia. The new speaker is a stunner, projecting profound frequency-wide dynamic impact while delivering an immersive soundfield populated with accurately-placed images. And ever willing to respect your décor choices, you can order the Sasha Series-2 for \$39,795 in standard automotive colours, in upgrade colours for \$41,095, or custom colours for \$42,295! All you have to do is choose.

More info: [www.advanceaudio.com.au](http://www.advanceaudio.com.au)





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SUBWOOFER OF THE YEAR

# REL Serie S5

Not a subwoofer, it's a 'Sub-Bass System' insists REL! But we don't have a category for those, so forgive us for calling it a subwoofer. At first glance it looks like a sealed enclosure with a 300mm front-firing driver, but underneath is a 300mm-diameter passive radiator of the suspended plate type (there's no underlying spidered suspension). So in fact the REL S5 is a bass-reflex design, but one that uses a passive radiator in place of a port. That's good — ports can often become noisy (the late Chris Green, who used to write for *Australian Hi-Fi*, loved reviewing subwoofers with noisy ports, because he could then literally describe them as having 'port noise complaint').

But REL's key differentiator is in its preferred connections. Rather than just plug through a line-level cable from the LFE output on your receiver or amp, REL believes that the only complete, unified approach for a 'sub-bass system' is to connect *both* the 0.1/ LFE *and* either line-level left and right or stereo speaker-level connections. And this does make sense — rather than just delivering the defined bass channel, the S5 can instead contribute its bass to stereo music and soundtracks as well. If you're thinking this might then double up on work being done by your main front speakers, that's why the REL has a lower crossover frequency than on most other products of the REL S5's ilk — rather than aim at raising

bass levels mostly across the 50–90Hz range, REL sets its sights at "useful output in the 20Hz–50Hz region".

We loved the result — the REL S5 completes the hat trick of sub-bass virtues, with linearity, bass extension and dynamism together, infectious in the same way a great rhythm simply forces you to move your feet. When listening to movie soundtracks it only got better, because not only was the music on the soundtrack improved, but the all-important low-frequency sound effects became almost visceral.

A different subwoofer, then (sorry, 'sub-bass system'), and an exceptionally good one for \$3399. Don't forget to warn the neighbours...

More info: [www.synergysaudio.com](http://www.synergysaudio.com)

HIGHLY COMMENDED: DEFINITIVE TECHNOLOGY SC4000 • SUNFIRE HRS-10



There's no 'Mine's bigger than yours' bragging rights with the \$1545 **Definitive Technology SC4000** — it's one of the smallest subs we've ever reviewed, with a single active front-firing 203mm bass driver backed by a rated 1200W

'BASH' amplifier, and then two matching plate-style passive radiators to shift more air in sympathy. You'll be amazed by the depth it achieves, and it's well-equipped too, including a small remote control which makes adjustments so much easier to make! Highly Commended status is richly deserved. More info: [www.advanceaudio.com.au](http://www.advanceaudio.com.au)

Sunfire in Australia is concentrated more in the installation area than consumer by distributor QualiFi, but these subs are worth seeking out — their reputation precedes them, and the \$1699 **Sunfire HRS-10** proved another performer that delivered astounding bass from a unit so relatively small — it has just a single



10-inch driver in a sealed cabinet, powered by 1000W of Class-H power (a variant of A-B), with fairly traditional controls. More info: [www.qualifi.com.au](http://www.qualifi.com.au)

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## WIRELESS SPEAKERS OF THE YEAR UNDER \$800

# Focal XS Book Wireless

In a world of one-box wireless speakers, we choose a two-box solution as our winner under \$800 (far under — the XS Book Wireless has an RRP of \$499). While wireless speakers have many advantages, they rarely deliver stereo separation, something we've come to rather enjoy since the 1960s, so that it's a shame to throw it away now. The Focal system requires only one additional wire to achieve this stereo delivery — the left speaker is passive, while the right carries all the electronics and power. You can build the system up, using the two analogue inputs for any sources you wish to add, but you could leave them at their minimalist minimum and use only the Bluetooth streaming that distinguishes this XS Book Wireless from the plain XS Book version. Plug in the power, link the two speakers and that's your set-up done.

Not only that, but they're very low impact in visual terms, a slimline design with top-plate and base just 200 x 65mm. Aptly named as 'Book', you really can pop them between books on a shelf, given a bit of space to accommodate their sides which flare outward halfway up to accommodate a four-inch Polyglass midbass driver, above which sits a 19mm aluminium tweeter. They port at the front.



The promise of performance shouldn't be a surprise for anyone familiar with Focal, a French company that makes some of the world's best speakers for the home (Grande Utopia EM, \$199,990) and the car (Utopia BE, \$5000 starting price). If you have an Android phone which supports aptX, so does the Focal receiver; iPhones and iPads will stream at a lesser 256k, Android devices without aptX at the 128k quality of default SBC Bluetooth.

Apple 256k streaming sounded pretty fine through the Focals, a powerful and dynamic

sound, a particularly incisive treble yielding tight and forward drum tracks and a slight edge to vocals, though there's solid enough (and tight) bass in support. Switching to the analogue inputs at the rear smoothed away just a hint of boxiness. We also used the minijack input at the rear to amplify our television, with excellent results in terms of both impact and intelligibility — these will challenge most soundbars, and without requiring a long unit to be sat in front of your TV.

More info: [www.audiomarketing.com.au](http://www.audiomarketing.com.au)

## HIGHLY COMMENDED: PHILIPS M1X-DJ (DS8900)

Something rather different — top DJ Armin van Buuren worked with Philips to create this \$549.95 **M1X-DJ** (also known as the DS8900), an affordable wireless speaker topped with a panel of semi-pro DJ controls and achieving its extensive replay abilities, speed matching, echo and flange etc., via the dJ2 app for iPhone or (preferably) iPad. The DJ side of operations is a great success thanks to this marvellous app (which costs extra, but not much), and we were delighted to find that the audio quality wasn't far behind — it can get a little big in the bass at times, playing to the likely genre of dance music, but it

filled a room with enjoyable music, able to handle subtlety as well as impact, tonal variation at medium levels as well as party levels. You can chain several of them together using aux in and out sockets, attach the shoulder strap and take them to the beach (as Armin suggested) since they can run on battery power (eight R20s). Genuinely different, the M1X-DJ sounds pretty good, has great DJ abilities and should light up many a bedroom with its ability to pump out the tunes. dJ2 can even play from Spotify, so the whole world (except Taylor Swift) is in your record box. More info: [www.philips.com.au](http://www.philips.com.au)



## WIRELESS SPEAKERS OF THE YEAR OVER \$800

# JBL Authentics L16

**T**he picture here gives no indication of the size of the \$1699 JBL L16 — it is 71cm wide, 24cm deep and 21cm, so your first consideration will be whether you have anywhere to put it! And second will be whether you consider its deliberate 1970s' styling to be a thrill — or not.

If you answer in the affirmative to those two qualifying questions, the rest is great news — this is currently the best sounding one-piece wireless speaker we've heard, and one of the best equipped. It has Bluetooth, but also Apple's superior-sounding AirPlay, plus it can stream over your home network from DLNA shares. You can also plug in additional sources to its inputs — minijack analogue, two USB slots, one optical digital, and a turntable phono input (hoorah!). And you can use one of the USB slots to power an optional Qi wireless charging pad which fits to the bottom of the top compartment lid and will then wirelessly charge any Qi-compatible device on the top.



The payback for allowing something quite so large into your home is the sound quality, which is equally enormous. A pair of decent 133mm woofers are configured in a genuine three-way system with 25mm tweeters and 51mm midrange drivers, and its bass performance is exceptional — in fact, the whole sound held us rapt, standing before the foam diamonds of its imposing frontage and enjoying an unusually decent stereo spread (many wireless speakers are all but mono

these days), and a richness and roundness that were part radiogram, part studio monitor. It sounds distinctly woody in its tonal palette, but with the dynamics and treble shine of a digital system. It knows how to rock'n'roll, for sure, but it sounded equally gorgeous with jazz, classics, and even spoken word. Remove the foam to gaze on its white drivers, a further nod to JBL's 1970s white-woofered L100 loudspeaker. A top performer even in a busy market. More info: [www.convoy.com.au](http://www.convoy.com.au)

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## USB SPEAKERS OF THE YEAR

# AktiMate Micro

The Epoz AktiMate range is an evolving feast, and they enchant us each time a new version comes to visit. We had been testing a group of soundbars when the latest Micro arrived; within minutes we had set up the two speakers (the three pictured here are just to show the colour range, you don't get three!) and within mere seconds we had sat down in front of them thinking 'Thank God, something that can play music!' The sounds flow forth from these small 24cm-high standmount/tabletop speakers with a rightness that delights — taut bass with impressive depth from ones so small, a fluid but punchy midrange and a treble that opens up music without ever getting peaky.

We've recognised the Micros in the USB Speaker category here since they have a USB-B input and excel when running tunes straight from your computer. But they also have an analogue minijack input — plugging our TV sound into this gave a clearer sound than most



similarly-priced soundbars. Plus they now have Bluetooth streaming built in, replacing the former top dock and dongle, so they're now wireless speakers as well. (It's good Bluetooth too, supporting not only SBC but also AAC and, since it's a CSR chip, apparently also aptX, though Epoz wouldn't confirm this.)

Their value survives the Micros' recent

price jump to \$550, which was explained to us as the result of "the Aussie dollar and new technology", but may also reflect that the AktiMate speakers now have an Australia-wide distributor in Audio Heaven, rather than doing their own thing. However they arrive, we continue to recommend these great designs. More info: [www.aktimate.com.au](http://www.aktimate.com.au)

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## SOUNDBAR OF THE YEAR UNDER \$800

## Yamaha SRT-1000



**W**e've heard some shocking results from cheap soundbars and bases, even from known brands — products that make your TV sound bigger but actually less intelligible. After all, it's asking a lot to get a decent complete sound system under \$800.

But we put ourselves through the pain of reviewing bad systems in order to find and recommend the best — and at \$649, Yamaha has squeezed an impressive combination of abilities and performance into this SRT-1000.

For those on a budget keen to boost the weedy sound common on today's flatpanel TVs, we often find that the better performers are not soundbars but bases which go under your TV. The SRT-1000 is a substantial unit particularly in its depth — 37cm front to back, 78cm wide and a little under 8cm deep, and Yamaha rates it good for supporting TVs up to 40kg in weight. In terms of inputs it doesn't stretch to HDMI but it has a generous pair of

optical inputs, plus one electrical digital input and full-size RCA sockets for an analogue device. That extra optical input is useful since the unit supports Dolby Digital and DTS surround processing when available, but many TVs will fail to pass these through their own optical outputs from connected equipment, so it makes sense to have an extra optical link running from your Blu-ray or DVD player.

There's also Bluetooth (aptX and SBC, but no AAC for Apple users), so the SRT-1000 doubles as a wireless music speaker.

While there's a small promise of creating pseudo-surround from Yamaha's technique of wall-bouncing sound from multiple speakers, don't expect too much of that; it's more about expanding your front sound than throwing stuff behind you. To this end there are eight small 2.8cm drivers at the front, two racetrack 4x10cm woofers, and a pair of 8.5cm "subwoofers" (there is also a sub out socket should you wish to add a real subwoofer).

The results are impressive. We played a whole episode of *Rockwiz* without once switching over to our main reference speakers to better enjoy some highlight. It sounded absolutely great on the musical performances, and clear on the game show sections.

Moving up to movies down the optical cable, the Yamaha was able to throw effects and musical scores wide while keeping dialogue firmly audible in the centre.

Do not, however, invoke the 'Music' mode so temptingly offered by the remote control (on which all the most visible buttons are the ones you should most steer clear of). The effect on timbre and tone can be appalling rather than appealing, especially with female vocals. If you're playing music, don't press 'music', press 'stereo'.

This overenthusiasm for processing aside, Yamaha's base yields remarkable sound at its price, while bringing bonus Bluetooth and additional inputs. More info: [au.yamaha.com](http://au.yamaha.com)

## HIGHLY COMMENDED: DENON DHT-T100

Denon's DHT-T100 is one of the smaller bases around — its 61cm width will be less than that of TVs of, say, 42-inches and above, making its 'podium' appearance actually more obvious to the eye than a larger base. The sloping top-front lip is adorned with a row of buttons and lights visible to the viewer — necessary for the only feedback as to the sound modes you have selected. As with many soundbars, set-up is laughably simple, especially as there's no subwoofer. The rear input panel provides great space and clear labelling, with inputs for optical digital (the best, says Denon), plus coaxial digital and one minijack analogue input with a useful three-position attenuator switch. But there is also Bluetooth, which means the Denon doubles as a

handy wireless speaker for your music — just put it in Bluetooth mode, pair from your smartphone, tablet or PC, and out flow the tunes. While it clearly doesn't (can't) go as deep as soundbars/bases which come with a separate subwoofer, nor the much larger bases on the market, this isn't entirely a negative. Handing your TV sound over to a system with a subwoofer can produce bass levels too intrusive for some people, especially for casual listening, and often with no way to reduce the

bass. Those problems don't occur here: instead you get a smaller single unit which does what it says on the tin — fixes the flatness of flat-panel TV sound. And it does so with great push for one so small. It transforms day-to-day TV with room-filling levels of clear sound; dialogue is kept realistically rounded with male vocals rich and female clear but never sharp. The sound can be tweaked using five 'listening modes'. At \$549, it's an impressive all-round TV-boosting solution. More info: [www.qualifi.com.au](http://www.qualifi.com.au)





## SOUNDBAR OF THE YEAR OVER \$800

# Denon DHT-S514

**I**t's a neat solution — instead of large loudspeakers for your TV room, have a slim soundbar in front of your TV and a wireless subwoofer off somewhere unobtrusive. It won't deliver the surround of a proper home cinema, but the best of the breed have raised the sonic standards significantly this year, able to deliver punch and level for movies, clear speech for news and (though this remains a rarity) even decent musical performance too. This last has become more important with the increasingly common addition of Bluetooth, so the soundbar doubles as a wireless speaker.

This Denon, at \$999, is one of the most musical soundbars we've yet enjoyed, and it's largely on that basis that we've given it our Product of the Year over the identically-priced Yamaha below. It's also nicely versatile in terms of connections. If your TV supports ARC (the Audio Return Channel of HDMI) and has a spare HDMI ARC socket, then that's the best

option.

There's also an HDMI input, so you can plug, say, your Blu-ray player into the Denon soundbar by HDMI, then a second HDMI cable on to the TV — this avoids the common problems in sending audio from the Blu-ray player through the TV and out again.

If you don't have ARC available there's an optical digital input or a minijack analogue input. There's also Bluetooth, so you can stream audio direct from a smartphone, tablet or computer straight to the Denon.

The Denon's musicality helps all manner of material, so that documentaries emerge with the voiceover kept clear and central as music

spreads across the bar's width (and occasionally beyond). Watching *Rockwiz* we were momentarily distracted from Julia Zemiro's magnificence by the impressively layered sound of audience reactions well separated from the main dialogue and spread wide across the room. The bar and sub kept things well integrated across the frequency range, with the smallest of dips between the sub's bass and the bar's midrange.

With onboard Dolby Digital and DTS decoding, it can pass real surround information from those soundtracks to its Dolby Virtual Surround processor, which then attempts not so much a 'fake' surround effect as a wide and immersing soundfield based on real surround channels; it worked well and, along with that good music, makes this Denon our pick of soundbars at this level.

More info: [www.qualifi.com.au](http://www.qualifi.com.au)

## HIGHLY COMMENDED: YAMAHA YSP-2500

The technology in this, Yamaha's latest \$999 Digital Sound Projector, is astounding — a full three HDMI inputs and an ARC-equipped output to your TV, two optical connections, a coaxial digital input, an RCA analogue stereo pair in, and Bluetooth (with aptX if your Android device supports it). There's a headphone output on the front, and a subwoofer output to the rear (should you wish

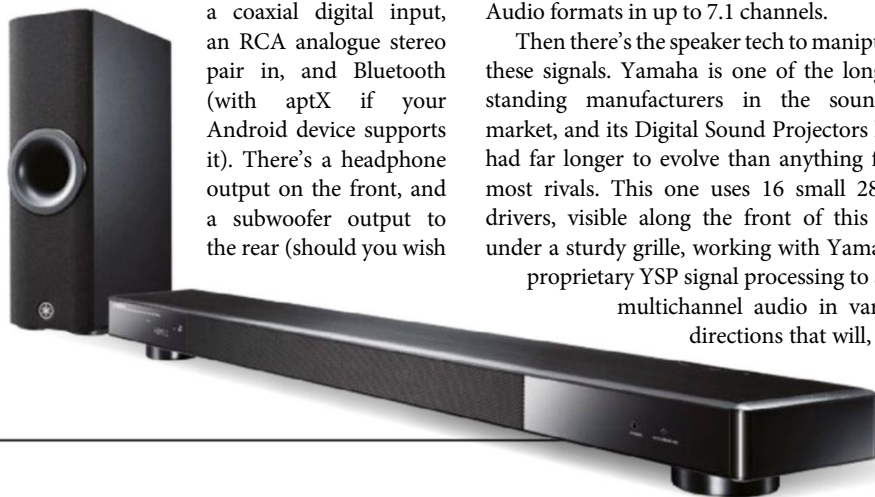
to use a sub other than the supplied wireless one). Then there's processing for not only the usual Dolby Digital and DTS, but also for full Blu-ray Dolby TrueHD and DTS Master Audio formats in up to 7.1 channels.

Then there's the speaker tech to manipulate these signals. Yamaha is one of the longest-standing manufacturers in the soundbar market, and its Digital Sound Projectors have had far longer to evolve than anything from most rivals. This one uses 16 small 28mm drivers, visible along the front of this unit under a sturdy grille, working with Yamaha's proprietary YSP signal processing to steer multichannel audio in various directions that will, if all

works according to plan, bounce rear channel sounds off your room's side and rear walls to immerse you in something approaching surround sound. The success of this will depend on your room shape — closer walls will work better, as will positioning in a corner with angled walls on either side, but Yamaha includes a microphone and calibration system that really does deliver the best possible result.

So it is totally top for tech, and very near the top on its sonic delivery. We thought the overall sound just a little processed, more noticeably with music than on movies, but still powerful, well resolved (thanks to processing for all those high-res audio formats) and highly enjoyable. There's nothing else on the market at this price with these facilities.

More info: [au.yamaha.com](http://au.yamaha.com)



## NOISE-CANCELLING HEADPHONES OF THE YEAR

# Bose QuietComfort 25

It's one of Bose's oft-told tales that its late founder Dr Amar Bose was flying SwissAir in 1978 when ear-tubes were being replaced by electronic headphones, and was so disappointed by the difficulty of hearing anything that he not only conceived noise-cancelling headphones on the spot but had a notepad of equations to achieve it by the time he landed. Yet it's fiendishly difficult. In order to cancel out noise in real time, you have to invert it and add it back pretty much instantaneously. It was 22 years before the company's first consumer noise-cancelling headphones made it to market.

Since then, however, Bose hasn't looked back, and while there are more competitors now than then, the company still rules the marketplace with its executive-friendly models.

Last year we were absolutely blown away by the company's QC20, an in-ear model of marvellous comfort and remarkable noise cancelling given the difficulties of doing so from an in-ear position. They took out our award last year, and if it's in-ears you're after, we still recommend them highly. But this year's noise-cancelling wonder is the new QC20, which is smaller, lighter and feels less luxurious than the company's QC3 and earlier models, but has a number of advantages. They use a single AAA battery for power, easy to find and replace when travelling. And they work passively without battery



power, when some earlier Boses simply didn't. Their lightness is a boon for comfort, and doesn't detract from the quality of cancellation at all — when you flick that switch the world recedes into muffled distance with just the slightest feeling of sucked-in eyeballs, then you can either simply enjoy the quiet, or enjoy the inflight movie over a bed of near-silence.

Top attraction here, though, is that Bose has delivered a great-sounding pair of headphones for music, whether you use the NC or not. They are lively but rich, solidly supported in bass but not bloomy, and they make as handy a pair of cans for the daily bus commute as they do for distancing yourself from the horrors of a long-haul flight. They have an inline remote

and mike on the cable, and they come with the usual hard case and airline adaptor (though not the cards Bose used to include to hand to interested fellow passengers, a marvellous bit of marketing!). As Bose expands into new areas like wireless music, it's good to see they're still improving this core expertise, the \$399 QC25s sounding their best ever, and improving ease of use as well. More info: [www.bose.com.au](http://www.bose.com.au)

## HIGHLY COMMENDED: PSB M4U 2

These were our Headphones of the Year two years ago, but we can't put them down, and when asked what we use as reference headphones, well, these are they, so we continue to recommend them. The first headphones ever designed by Canadian company PSB and its founder Paul Barton, the \$469 M4U 2s are unusual in having three switch positions rather than the two that noise-cancelling headphones usually have. So you can use them entirely passively (no batteries required), or you can turn on the noise-cancelling, which is quite the best we've heard, with no eye-sucking and marvellous peace, assisted by the enormous earcups and sizeable earpads sealing out noise.

But, reasoned Mr Barton, if we've got power on board, why not use them in an active mode even when not noise-cancelling? So the middle

setting adds a volume kick in addition to what PSB calls 'RoomFeel' EQ, tailored according to a multi-year research program at Canada's audio labs of renown at the National Research



Council. We absolutely love the results — a powerful but natural performance with a more open feel than any closed design has a right to deliver. They are simply superb headphones. They even allow cable connection to either earpiece, which can be a huge bonus.

So why don't we keep giving them the top gong? Well they really are very big, even in this age where people think nothing of bumping into lampposts as they walk down the street because their headwear is so oversized. So they're not much cop in a plane seat because, despite their comfort and great performance, you can hardly move your head.

So they're not for everyone, or everything. But for sound quality in that active mode, and noise-cancelling too, don't dismiss them until you've heard them. [www.qualifi.com.au](http://www.qualifi.com.au)



## HEADPHONES OF THE YEAR

# Sennheiser HD8 DJ

**T**ake noise-cancelling out of the equation, and our Headphones of the Year are these Sennheiser HD8 DJ model, priced at \$499. This is potentially a controversial decision, since as the name suggests, these are designed for the DJ market, and they don't come with a short travel cable for commuting on the bus, just one long curly and one long straight one, unadorned by any inline iPhone controls or call-answering microphones. Sennheiser even sent us a note saying "they don't really get maximum sound out of iPhones etc and that's why there is no shorter travel cable".

It's true that being 95-ohm headphones with a load rating of 500mA, they give their very best at home or work with a decent headphone socket (e.g. a mixer) or better, fed from decent dedicated headphone amp. Sennheiser says they were "inspired by the sound signature of the legendary HD 25", but we don't remember quite such a solid bass as delivered here; these are rhythmic masters, pumping a fast and taut bass, mildly emphasised when heard in a quiet environment, grippingly powerful and capable of going impressively loud without getting into trouble — no doubt essential in a DJ environment. Bass is not everything, of course, and

Sennheiser has delivered a rich balance that seemed flawlessly fine, flat except for that mild bass emphasis, and beautifully musical — we put them against many rivals at this current sweet-spot price of \$499, 'A-B'ing until we had a favourite, and they came up top every time.

So is Sennheiser right in eschewing them for the road? We don't think so. They had plenty of level available from an iPhone output, and sounded just as dynamic against a commuter rumble — they're also super-sturdy, from the thick steel expandable headband and metal reinforcement parts to those overlong Kevlar-coated cables which fix to your choice of left or right headshell with a bayonet twist (the non-curly cable proved slightly microphonic, though not at a level to interfere with music). The HD8 DJs are clearly built to survive everyday use, and even abuse. And we love how the stainless steel pivot ring adjusts to rotate the earcups to select your preferred angle as they click firmly between the three available positions.

So the sound's the thing, and the HD8 DJ offers rugged professionalism on top. We love them. More info: [www.sennheiser.com.au](http://www.sennheiser.com.au)



## HIGHLY COMMENDED: YAMAHA HPH-M82



This was one of those headphones that we popped on at a launch for a quick audition, and went 'Oh!' They're just \$129.95, yet feel decidedly well-constructed with their unusual twist in the headband and diamond-shaped nylon-fibre-covered foam earpads (which make most people initially put them on the wrong way round). They're compact, though they don't fold any further for storage, and they come in an attractive range of colours!

For their sound they use 40mm drivers that have Yamaha's own 'Tangential Edge' diaphragm, which the company says adds both stiffness and flexibility. And it was the resultant sound quality which grabbed our attention. They're by no means bass monsters, so if that's your preference, look elsewhere. Yet the bass is certainly there within a well-

balanced sound — almost gentle and beguiling in not assaulting your ears with either excess treble or bass bloat, instead offering a musical delivery of everything from classic rock to jazz and modern dance or indie music. They cut-through when the tracks demand it, lay back nicely when Leonard Cohen wishes it so — his voice was perfectly handled in the upper bass to mids, just slightly softer than the optimum in bringing his upper midrange rasp forward. When pushed to top levels on songs with high bass they can start to exhibit overloading, but up to that point they remain balanced, clean and musical, and despite costlier models being available to us, these became one of our favourites for using in the office and the daily commute — the highest recommendation we have! More info: [au.yamaha.com](http://au.yamaha.com)



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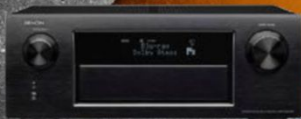


AV RECEIVER OF THE YEAR  
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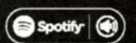
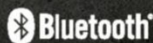
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## SPECIAL HEADPHONE AWARD

# Oppo PM-1 & HA-1



Oppo has hitherto been best known for its Blu-ray players (and in China for its mobile phones, from the same brand but now a different company). So the arrival of the PM-1 headphones and an accompanying HA-1 headphone amplifier was quite a surprise. The pricing — \$1799 for the HA-1 and \$1699 for the headphones — puts them up in a belt of fairly luxurious headgear, but they certainly qualify, and how! The PM-1s are every inch a luxurious phone, from their leather headband padding and perforated leather earcups to their spare velour earcups and even their high-end packaging, with a box inside a box inside a box, the last being a presentation lacquerware wooden box of great magnificence.

The technology is also unusual, these being planar magnetic headphones where a thin seven-layer diaphragm is driven across its whole surface by double-sided spiralling coils, all within a fixed magnet system. Planar magnetic headphones are invariably among the heaviest of headphones, so Oppo has done impressively to claim these as the lightest ever of their breed; together with those luxury trimmings, the comfort levels are high indeed.

They made a tour of our team, impressing all who heard them with the unique characteristics of their planar-magnetic drivers, and

their full tuneful and fast bass in particular. Yet listening as they were to music on some smart device of choice, using the thin minijack cable provided for use 'on the road', we knew that they were not hearing the Oppos at their very best. Sure, they do sound great in that application, but the Oppos arrive cabled with a chunky Kevlar cable with a quarter-inch plug, gold-plated (of course). The PM-1 sings best of all using this cable (or even better the optional balanced cables) into high quality headphone amplification with plenty of current.

Oppo provides one of those too, in the HA-1. Use the two in combination and their performance is significantly improved in terms of additional power behind them and the effortless dynamics this brings. We were captured by their sound, and they sailed through all our demo track torture tests — Leonard Cohen's vocal on 'Going Home' was perfectly presented with all its depth and roundness in the centre, the elements around him resolved and delivered as individual elements. (This was the first time we heard the gated background noise on Leonard's vocal, on this track we have heard many many times.) There is, perhaps, a slight softness overall, the highs not opening acoustic details fully to the skies, though this does keep any potentially peaky recordings in check — Billie Holiday's

'One For My Baby' can be all too easily made painful by peaky presentation but never once worked up a wince here.

Meanwhile the HA-1 is far more than an accompaniment to the PM-1s — you could quite easily enjoy the HA-1 for years without ever plugging headphones into it. It has a USB-B socket to play from a computer, and four other digital inputs — optical, RCA electric and AES/EBU through an XLR-type socket, plus a USB socket at the front. And it can receive via Bluetooth. Its DAC proved excellent, and because you can set its outputs to be variable, you could use it as a preamp straight into power amps, using the remote control for volume. If you're careful.

And it has perhaps the coolest display ever, with a number of display options, including the spectrum display shown above, though our favourite is a bright pair of VU meters, ready to bounce in the red as you play your tunes.

To listen is to love, with the Oppo PM-1s. Given their marvellously well-considered bass, riveting midrange and dreamy overall delivery, the slight veil keeping the very top end in the realms of friendliness is the smallest of negatives, and we only mention it given the price. The rest was joy, and we created this Special Headphone Award to honour them as a pair. More info: [www.interdyn.com.au](http://www.interdyn.com.au).

NO HIGHLY COMMENDED PRODUCTS IN THIS CATEGORY

## STEREO AMPLIFIER UNDER \$5000



### STEREO AMPLIFIER OF THE YEAR UNDER \$5000

# Marantz PM5005

The \$590 Marantz PM5005 is a 'classic' amplifier in many ways. Its bass/treble tone controls and left/right channel balance controls are right there on the front panel, rather than buried under software layers or tucked away on the remote, and the same goes for its source switching capabilities, which are not only comprehensive, but also right there on the front panel. Its circuitry is also 'classic' because Marantz is using a traditional passive transformer and smoothing/storage capacitors in its power supply, rather than a switched-mode supply, and also a 'classic' Class A-B output stage, rather than Class-D.

However, what's not 'classic' about the PM5005's circuitry is that it employs current feedback — rather than voltage feedback — architecture. Although current feedback had been used in high frequency amplifiers

for many years, it was first proposed for use in audio amplifiers only in 1990 in a circuit topology invented by Mark Alexander. Using current feedback in an audio amplifier results in extremely wide bandwidth and an ultra-fast slew-rate, resulting in very low distortion levels, most especially as regards IMD and TIM distortions. Also circuit-related inside the Marantz are the company's HDAMs. Instead of using op-amps packaged as integrated circuits, the company makes its own functionally equivalent circuit but using discrete circuit boards and discrete surface-mount components. These HDAMs perform exactly the same electronic function as ordinary mass-produced op-amps, but have faster slew rates and lower noise levels, which Marantz says result in a much more dynamic, accurate and detailed sound. Marantz builds several different types of HDAM, and the ones used

inside the PM5005 are two steps up from its basic versions, with HDAM3s being used throughout. The Marantz offers five line-level inputs, plus a phono stage. It also has 'Source Direct' and 'Mute' circuits.

Although the PM5005 isn't overly powerful (55W per channel into four ohms) it has ample power with efficient speakers in ordinary-sized rooms, and in any case delivers more than its rated power under normal operating conditions. The current feedback circuit must work brilliantly, because this amplifier's sound quality is outstandingly good right across the frequency range and irrespective of output level, so it's not surprising the judges' comments included the statement that the Marantz PM5005 was: "a superb full-featured entry-level stereo amp with decent power output, great sound, a phono stage and a classy remote". More info: [www.qualifi.com.au](http://www.qualifi.com.au)

### HIGHLY COMMENDED: NAD D 3020

The original NAD 3020 was released back in 1978, deliberately both over-specified and under-priced (at least according to the hi-fi equipment reviewers of that era) and a run-away success story for the company, which sold more than a million of them. But unlike all previous 3020 variants, this new \$699 D 3020 uses both a switched-mode power supply and a Class-D output stage. There's onboard Bluetooth, a 24-bit/96kHz USB input, one each of optical and electrical digital inputs, and two analogue inputs, one on gold-plated RCA terminals and the other via a 3.5mm stereo socket which can convert to a second optical input. There's also a subwoofer output.



Those high-quality Class-D amplifiers allow delivery of a remarkable amount of power from one so small (you can use it vertically or flat), but it wasn't a 'digital' Class-D sound. NAD has made great strides in recent years in digital amplification, and the D 3020 was able to deliver crisp high-frequency sounds along with super-solid bass delivery — super-precise, no overhang, no unwanted warmth... just wham and slam whenever required.

So while there's little technological or visual similarity between the D 3020 and the original, they share the essentials — high value performance from a neat and audio-first design. Highly commended! [www.qualifi.com.au](http://www.qualifi.com.au)





STEREO AMPLIFIER OF THE YEAR OVER \$5000

# Devialet 200

The Devialet 200 is unique in its technology, form and functionality. It's far more than a simple amplifier component, announcing itself first through the French company's choice of radically different external design, but really set apart by the hybrid amplification circuit that lies within. It also incorporates a state-of-the-art DAC, Wi-Fi streaming and internet music services, plus — as if biting a thumb at its own futurism — a superbly featured on-board phono stage for turntables. Sonically, it's in the top tier of digital and amplification technology as it stands today. But it's also for tomorrow — the 200 is upgradeable via software. Indeed it arrived with us as the Devialet 170, and after we reviewed it, Devialet released the software to turn it into the 200. So we reviewed it all over again. It wasn't too much of a chore.

Let's start with the remote — it's the best we've ever used. It's a machined chromed metal box like the main unit, with a large central and beautifully-actioned volume dial with small buttons for power on/off, input switching, muting and, interestingly, 'tone', arranged around it. This last adjusts treble and bass in subtle increments via DSP.

DSP is used extensively in Devialet's amps, and the French company is making something of a specialty of releasing DSP 'profiles' for different loudspeaker models which tailor the Devialet's output for the precise characteristics of that model. They call this SAM — Speaker Active Matching.

The phono stage is similarly innovative, digitising the turntable output so that it can then apply DSP here as well, adjusting to match the precise characteristics of a particular cartridge. Heaven knows what vinyl

aficionados will make of this digital treatment of the analogue domain!

But that's Devialet's point. The amp combines old and new tech without prejudice, paralleling a low-wattage Class-A amplifier with a high-power Class-D amplifier dedicated to providing current, in a hybrid arrangement that promises and delivers the sweetness of solid-state Class-A circuits with the bass power and control of good Class-D designs. In fact we found the presentation utterly neutral. The Devialet 200 does not editorialise the music. It's neither cold nor warm, dark nor bright. Pair it with an equally neutral speaker and you'll get a presentation that is as honest as high-end audio gets.

It is, of course, \$10,500. But when you consider what it replaces, and the level at which it performs, we reckon that counts as top value. More info: [www.ovation.com.au](http://www.avation.com.au)



HIGHLY COMMENDED: MARANTZ PM-11S3 • VTL MB-125

We were blown away by Marantz's \$8600 integrated amp the PM-11S3, with its triple-stage construction (preamp, dual power amps and phono mm/mc stage), oversized toroidal transformers, Shottky diodes and high power output even into extremely low-impedance speaker loads). And that copper-plated chassis looks absolutely superb. Facilities are exemplary — almost as if they went through an

audiophile's wish list and ticked all the boxes. The result is a sound that, while impressive for its sheer power, is also notable for its cleanliness and clarity, the transparency it offered so that we heard the speakers and sources rather than any amp characteristic. As it should be! More info: [www.qualifi.com.au](http://www.qualifi.com.au)

With space for only one picture here, we can't show you the glowing EL34 and 12AT7 valves that lie behind these all-American monoblocs (you'll need two, at \$8995 the pair). On the front, there's just that rocker power switch and a small blue LED; at the rear a single RCA

signal input and a machined pair of speaker binding posts. The VTLs proved very speaker friendly, and outstanding with the difficult-on-paper Wilson Sashas, amongst the sweetest yet hardest-driving valve amps we've enjoyed. More info: [www.advanceaudio.com.au](http://www.advanceaudio.com.au)





## AV RECEIVER OF THE YEAR UNDER \$1000

# Denon AVR-X1100W

Receiver shoppers have never had it so good — these multichannel amplifiers continue to add more additional features than ever, and thanks to app control they're a million miles easier to operate today than in the days when you had to kneel down and peer at their front panel displays. Happy times.

The entry-level receivers are perhaps the most astounding of all. Take our winner under \$1000, Denon's AVR-X1100W, with an RRP of \$849. The traditional receiver specs are that it is a full seven-channel unit quoted at 80W watts from each, two channels driven. It supports the usual range of DTS and Dolby surround modes, including the discrete multichannel streams from Blu-ray.

If you're running only a 5.1-channel system, you can use the two leftover amps to bi-amplify the front stereo speakers, or to

provide power to a separate 'B' set of front speakers, or run stereo speakers in a second zone (this is the only zone support provided by this receiver).

Then we get to the modern stuff. It has built-in Wi-Fi to connect with your home network, and built-in Bluetooth too. The front USB socket provides full support for Apple devices, but once networked there's also AirPlay so you can stream at high quality from Apple devices, while Android users can stream to it using DLNA. There's also onboard Spotify and internet radio (and FM, and AM radio as well).

Every home needs an HDMI hub, and the Denon has a total of six HDMI inputs. Two of the rear panel ones will pass through 4K up to 60Hz, the others pass through 1080p, including 3D. The single HDMI output supports the Audio Return Channel, so most

recent TVs should be able to send the sound from broadcast TV stations back down the HDMI cable to the receiver.

Older connections are relatively sparse: just two analogue audio inputs, two optical digital audio and two composite video.

The Audyssey MULTEQ XT room calibration system requires at least three and up to eight measurement positions in order to get the best sense of the room.

Surround positioning was convincing with movies and upfront with music, well balanced tonally and with good control of the loudspeakers. It felt a touch short on stereo of that astonishing 'being there' feeling provided by the best of equipment — but of course that's why this home entertainment category doesn't top out in this price category. But what is does do for the price is astonishing in itself.

More info: [www.qualifi.com.au](http://www.qualifi.com.au)

## HIGHLY COMMENDED: YAMAHA RX-V577

Yamaha's networked AV receiver at \$949 proves a great all-rounder for someone wanting a combination of the latest networking wonders together with traditional receiver strengths. The headline figures are seven channels of power rated at 80W each (two channels driven into six ohms); if you only need five channels you can use the leftover two for biamping your front speakers or driving an extra zone (though there's no independent source selection). There are six HDMI inputs plus various analogue and digital inputs (analogue inputs are not converted through to HDMI).

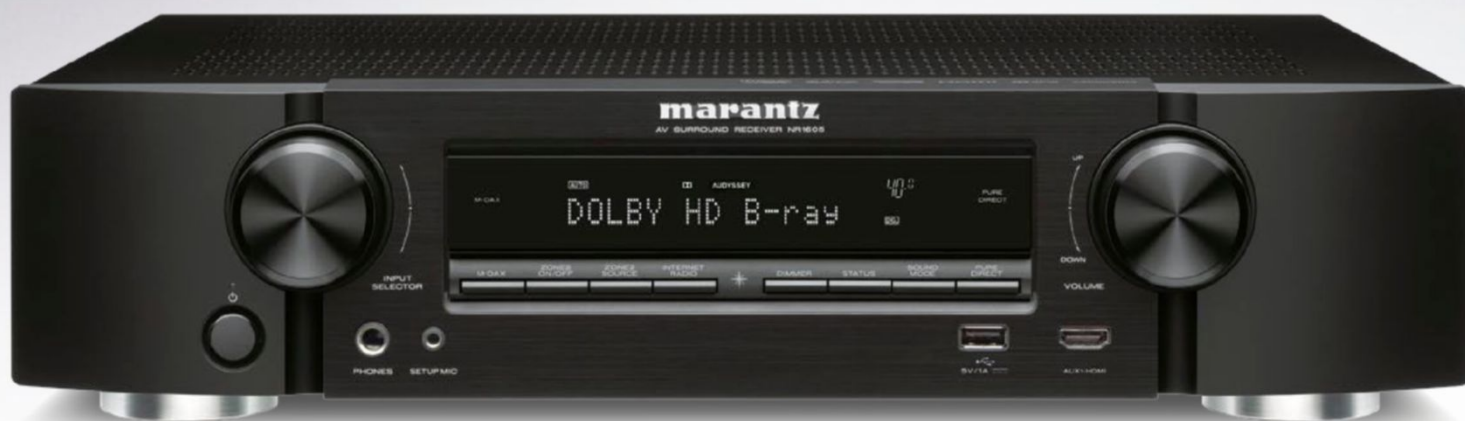
Once networked by either the built-in Wi-Fi or Ethernet, you can stream to the V577 using AirPlay from Apple devices or DLNA from Android, and also enjoy the built-in internet radio, Pandora and Spotify Connect. All this is controlled with ease from the app



available for iOS and Android. There's also mike-based calibration, and once done we thought stereo performance to be highly impressive for the price, while surround soundtracks were delivered clean, well-defined in imaging, and balanced. Note there's no video processing at all here, but it passes through everything including 4K signals, leaving your screen to do the rest. Note also that four-ohm speakers are not officially supported.

Moving higher will bring more power, but the V577 is highly competent and loaded with smarts. More info: [au.yamaha.com](http://au.yamaha.com)





## AV RECEIVER OF THE YEAR \$1000-\$2000

# Marantz NR1605

Compare the Marantz above with all the other receivers on these pages... what's different? It's not the usual huge box, not the double-height hulk that is hard to hide in the AV cabinet. We call them shining examples of AV achievement, but we've heard others refer to them as, well, bless their knobs an' all, plain old ugly.

Much of the height of the average receiver has long been to allow airflow around all those hard-working amplifiers, and also just to physically fit all the required sockets on the back panel. But HDMI has replaced five cables with one, and today's Class-D amps are efficient and run cooler. So with only minimal curbs of ability required, Marantz can deliver the latest in its line of 'slimline' receivers, the \$1080 NR1605.

It is, to be precise, 105mm tall, including the feet, but not including the twin antennas

which poke up from the rear for the built-in Wi-Fi and Bluetooth. Aside from the height, there's not much to mark it as significantly different from bulkier models in the same price territory. The power rating of 50W per channel is slightly low (for a receiver), though this really didn't manifest in use — it proved to have plenty of drive for our quite large test room and for averagely sensitive six- or eight-ohm speakers. It can handle four-ohm speakers too (some can't, at least not officially).

Despite the limited back-panel space there are eight HDMI connections in total (one on the front) and two component video inputs. USB is on the front, Ethernet is at the back. There's one optical and one coaxial digital input. While there's no room for 7.1 channel pre-outs, there is room for 2.1, which is much smarter than the 0.2 many others go for. If you want to focus on high quality stereo, then

you can add some audiophile power amps to look after your favourite front speakers. And the amplifier assignments are reasonably flexible, with bi-amping, front height, surround back, front speaker B and zone 2 as available options.

It's a thoroughly modern receiver, too, with music streaming available via Bluetooth or, once networked via Ethernet or the built-in Wi-Fi, by Apple AirPlay or DLNA, while the Marantz can itself access Flickr, vTuner internet radio and Spotify Connect. There's an iOS or Android app to control all this. And unlike Marantz models of the last couple of years, the tuner section now includes AM as well as FM.

So all in all, with Marantz doing the designing, we decide that we rather like it small. Could it be smaller still, we wonder?

More info: [www.qualifi.com.au](http://www.qualifi.com.au)

## HIGHLY COMMENDED: ONKYO TX-NR636 • YAMAHA RX-A1040



Onkyo's \$1199 receiver has one particular differentiator — it includes Dolby Atmos processing, should you be ready for the new height channels (see *SoundOff* p92), and also one HDMI 2.0 input with HDCP 2.2 copy protection compatibility, which may or may not become important once proper 4K content is launched. But that HDCP chipset also limits

chroma subsampling to 4:2:0... see our upcoming review for details! Otherwise it's a strong offering, with Bluetooth and Wi-Fi (2.4GHz only) built in, DLNA streaming but no AirPlay, seven channels rated at 95W, and seven HDMI inputs. More info: [www.ambertech.com.au](http://www.ambertech.com.au)

Moving up the price range to \$1899, here's Yamaha's second-level fifth-gen AVENTAGE receiver, with seven channels rated at 110W, eight HDMI inputs and two outputs, and built-in Wi-Fi but not Bluetooth, which comes via a plug-in dongle. Multipoint calibration is supported, and that done, the performance was

excellent, driving six- to eight-ohm speakers of average sensitivity to very high levels, while control of the smart stuff (Pandora, Spotify Connect, AirPlay streaming, network streaming including high-res) is easy via the free app. A great receiver, simply loaded at the price. More info: [au.yamaha.com](http://au.yamaha.com)



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AV RECEIVER OF THE YEAR OVER \$2000

# Yamaha RX-A3040

Yamaha's top-of-the-range Aventure model is in its fifth generation, and with each previous gen also taking out our highest receiver award, this is in danger of becoming a habit. The company hasn't merely rested on its laurels, however — the A3040 bristles with the latest advances, including Dolby Atmos support via its latest firmware upgrade, and not only the 5.1.2 and 5.1.4 or 7.1.2 channel version but up to 7.1.4 (effectively a 7.1-channel surround system with four ceiling speakers). There's upscaling to 4K, there's full networking built in, including Wi-Fi, for Pandora, Spotify (including Spotify Connect) and internet radio, while you can stream via Apple's AirPlay or DLNA.

Set-up includes full and highly controllable calibration, now more complex because of

the possibilities of including Atmos height channels. And certainly Atmos did its job (with our one and only Atmos disc at the time, a demo disc from Dolby). There were raindrops striking something invisible above our heads, a whirling leaf falling through the air, its virtual position precisely defined, a dangerous-sounding insect darting this way and that above and to the rear of us. And with our broader range of non-Atmos 5.1 and 7.1-channel material, Dolby Surround (as everything else is now called) did a very good job with quite a bit of it in filling in the acoustically dead area overhead.

The headline specs are nine amplifier channels each offering up to 150W of power into eight ohms at hi-fi specifications, eight HDMI inputs plus good support for legacy

formats (except S-Video, gone at last!), and everything controlled by the excellent Yamaha AV iPhone/iPad and Android apps — today's control apps really have revolutionised ease-of-use for these potentially complex pieces of equipment, and Yamaha's is one of the best in this regard.

The only omissions of note are Yamaha's continued lack of official support for four-ohm speakers on all but the front L/R channels, and that Bluetooth is received by dongle rather than being built-in. Otherwise this is, we think, the most complete home theatre receiver we've yet seen, and capable of spectacular home cinema performance. Perhaps the biggest surprise with this top-of-the-line receiver is its price — \$2799 is not a huge amount for the state of the art. More info: [au.yamaha.com](http://au.yamaha.com)



## HIGHLY COMMENDED: DENON AVR-X4100W

The \$2299 Denon AVR-X4100W is also now enabled for Dolby Atmos, though this firmware wasn't yet in place when we did our review so we were unable to enjoy its implementation. It has seven amplifiers, each rated at 125W under hi-fi criteria, but there

are 13.2 channels of preamplifier outputs, which means you can either have a number of the different configurations available at the same time (e.g. biamping front speakers using unused amp channels), or add external amplifiers for, say, increasing the Dolby Atmos channel count. Lots of other connectivity is provided, with plenty of analogue inputs, including moving magnet phono, and eight HDMI inputs, one on the front panel. There are two HDMI outputs for

the main zone, and a third for an extra zone. There are also line audio outputs for Zones 2 and 3, and composite video and assignable component video for Zone 2.

Wi-Fi and Bluetooth are built-in, so you can stream via Bluetooth, AirPlay or DLNA (it's high-res compatible, including DSD), there's Spotify Connect, Audyssey MultEQ XT calibration, and control of it all via Denon's Remote App for iOS and Android.

And it sounded first class, with excellent surround and stereo sound, utterly competent handling of crossovers and such, and fine control over the loudspeakers. Highly commended! More info: [www.qualifi.com.au](http://www.qualifi.com.au)

# IN-CAR AWARDS

The incar environment might seem an unfriendly place for high-quality audio — engine noise, road noise, and a listening room that's traveling at speed... But there are also advantages. It's a much more predictable environment for those designing the amps and speakers, especially those working on factory-fit systems for a single vehicle — every listening room identical, every end-user sitting in the same place! With such potential for a controlled environment, and today's cars a lot quieter than the bone-rattlers of days gone by, incar audio can achieve great things.

Our sister publication *Australian Incar Entertainment* spends its whole year installing and auditioning systems for the car, especially aftermarket head units, amplifiers, speakers and subwoofers that can upgrade the usually (though not always) average performance of the systems that come from the factory. And with today's vehicles being run by computers, there's the possibility of integrating not only your audio system but rear screens, navigation, communications and security as well, and *Incar* magazine covers these areas too. Then after a hard year's reviewing, they join the *Sound+Image* team to determine the

winners of our incar categories, all of which are listed over the next three pages. We've kept the entries fairly brief here, but the Awards issue of *Australian Incar Entertainment* (see top corner opposite) has everything in more details, plus some of its regular installation stunners to boot, and that's available digitally now from Apple Newsstand and Google play, as well as newsagents. Our thanks to its Editor Ed Kramer and the *Incar* team for their time and judging exertions — and now let's see the winners. After all, many of us spend almost as much time listening to music in the car as we do at home, so it's worth listening in quality...

## HEAD UNIT OF THE YEAR: **PIONEER DEH-X8650BT**

### HIGHLY COMMENDED: **ALPINE CDE-148EBT • FUSION CA-ML650BT**

As the industry's bread and butter entry point into quality car audio, this category is a highly populated landscape replete with affordable products that offer an all-round step up from the factory fare. The Pioneer DEH-X8650BT encapsulates all that you'd want in a single-DIN head unit while coming in at an affordable \$339. And at the RRP the combination of features offered here by Pioneer is quite

staggering. We have a well-engineered isolated disc transport, and USB 2.0 connectivity which is compatible with smartphones, thumb drives and hard drives. Further music file playback is available via an SD card slot which also takes miniSD and microSD cards. There are a number of analogue inputs (including 3.5mm aux), 4-volt outputs, four channels of ampli-



fication, 5-band EQ, Pioneer's own MixTrax software, Bluetooth V3.0 and more. Truly outstanding value. [www.pioneer.com.au](http://www.pioneer.com.au)

## MULTIMEDIA HEAD UNIT OF THE YEAR UNDER \$1000: **ALPINE IVE-W554ABT**

### HIGHLY COMMENDED: **CLARION VX404AU • PARROT ASTEROID SMART**



This is yet another quality multimedia head unit from Alpine in the 'under \$1000' category — an increasingly hard-fought battle field as more brands join the fray. Alpine has not spared the facilities in its IVE-W554ABT multimedia offering. Aside from compatibility with a vast array of formats, both video and audio, the unit is Pandora-capable, has comprehensive connectivity (including USB), Parrot Bluetooth, Alpine's advanced sound

processing featuring a 9-band parametric EQ, comprehensive crossover adjustment and, yes, the very important time alignment to get the soundstage just right. Three pairs of 4-volt outputs are offered and on-board amplification is via four channels at 50 watts peak. MirrorLink is also included to mimic your smartphone's operability, and to top it off the display was judged to be of exceptional clarity. Superb tech, Alpine! [www.alpine.com.au](http://www.alpine.com.au)

## MULTIMEDIA HEAD UNIT OF THE YEAR OVER \$1000: **PIONEER AVIC-F60DAB**

### HIGHLY COMMENDED: **ALPINE INE-W957A • SONY XAV712NAV**

Pioneer has been increasing the overall quality of its flagship AVIC units with each generation offering fatter feature lists, higher performance, improved functionality and refinements to its AppRadio software. Here the company has gone the extra yards — this unit is chockers with the latest tech, including Apple's CarPlay, MirrorLink, and the afore-mentioned AppRadio. There's Pandora on-board, plus full

navigation, Bluetooth and even digital radio (DAB+) in conjunction with the obligatory AM/FM receiver. Tune your sound with a 13-band graphic EQ and time alignment, and benefit from the host of 4-volt outputs and additional inputs to the 4-channel amp. Pioneer has designed the car world's Swiss Army knife in this thoroughly complete and excellent head unit. [www.pioneer.com.au](http://www.pioneer.com.au)







Our Incar categories are judged with the assistance of our sister magazine AUSTRALIAN INCAR ENTERTAINMENT, which covers incar audio, AV, satnav and security. The Incar Awards issue covers all the products here in extensive detail and is available in newsagents and digitally on Apple Newsstand, Google play and Zinio...

## AMPLIFIER OF THE YEAR UNDER \$1000: **DB DRIVE A3-2250.5**

HIGHLY COMMENDED: **FOCAL FD350.1 • PIONEER GM-D9604**



DB Drive has manufactured an amplifier that is not only thoroughly-engineered and expertly built but also offers true flexibility. It's an all-in-one hybrid amplification solution featuring four Class-A/B channels outputting 150W each supplemented by a Class-D subwoofer channel that kicks 500W (all power ratings into four ohms). This last Class-D channel is one serious powerhouse

too; it can output around 1000W into one ohm. Bring it on tough subbies! But the A3-2250.5 is not just all about brute force; it's an extremely well-built component with classy anodised casework and a circuit design that is very well engineered and features high quality components. Not a one-trick hybrid pony but a very well thought-out amplification device. [www.dbdrive.com.au](http://www.dbdrive.com.au)

## AMPLIFIER OF THE YEAR OVER \$1000: **AUDISON PRIMA AP8.9 BIT**

HIGHLY COMMENDED: **GROUND ZERO GZPA REFERENCE 4 • MOSCONI GLADEN AS300.2**

The Prima AP8.9 bit may be diminutive but this amplifier from Italian specialist Audison is packed with 21st century technology. This is no simple run-of-the-mill amplifier. The AP8.9 bit's on-board tech features a 32-bit Cirrus Logic digital sound processor which provides crossover adjustment in high-, low-, or band-pass, Linkwitz or Butterworth and multiple slope options. It then continues to

on-board time alignment out to 510cm and 15ms, a 10-band PEQ with  $\pm 12$ dB adjustment and there are separate level, phase, routing and mixing controls. All can be set via proprietary user interface software which you install on your PC. A stream of inputs and output options are provided, including optical digital. Well built, solidly engineered, stackable, tiny... mighty! [www.audison.com](http://www.audison.com)



## SPEAKERS OF THE YEAR UNDER \$1000: **FOCAL PS 165 FX**

HIGHLY COMMENDED: **MTX AUDIO T6S652 • POLK AUDIO DXi6501**



Over the years and as a true innovator, Focal has brought to market a variety of speaker designs bearing the fruit of the company's R&D. For many product generations Focal has used fibreglass, fibre pulp, titanium, beryllium and more. And now, in its latest products, Focal has taken flax, a natural fibre growing in abundance in France, and has designed a growing range of high quality transducers. Thus we see the PS 165 FX speakers which

feature the use of flax in the 165mm mid/bass unit. And the research has brought worthy sound quality gains that had the judges exclaiming "... the PS 165 FX speakers possess a virtually transparent acoustic signature and they are a whole lot more fluid, dynamic and neutral sounding than anything else on the market at the price point." True innovation with Focal's trademark all-round excellence. [www.focalaustralia.com.au](http://www.focalaustralia.com.au)

## SPEAKERS OF THE YEAR OVER \$1000: **ALPINE DLX-F177**

HIGHLY COMMENDED: **FOCAL ULTIMA • MOREL ELATE TI 602**

A couple of years ago Alpine saw fit to reintroduce the company's famous flagship DDLiner range of speakers. As a product of Alpine's considerable R&D prowess, the DDLiner range features advanced materials, innovative engineering and outstanding build quality. Proof is provided via the immaculate build quality and solid technology, with the 170mm mid/bass driver featuring a Multi-

Layered Hybrid Fibre diaphragm, a large high temperature voice coil and an unusual roll surround which aids excursion linearity. The tweeter is a high power design which incorporates a phase plug and a 30mm voice coil. The judges said "... the detail presented is among the best we've heard... they drew us into the

music." These are truly outstanding Alpine creations. [www.alpine.com.au](http://www.alpine.com.au)

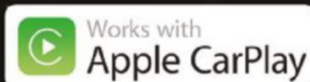




# Apple CarPlay iLX-007E



## iLX-007E 7" In-Dash Receiver with Apple CarPlay



Apple CarPlay gives you an incredibly intuitive way to make calls, use Maps, listen to music, and access messages with just a word or a touch. When you connect your compatible iPhone to the iLX-007E, you can control Apple CarPlay from the 7-inch touch screen or activate Siri to minimise distractions. You'll like the clean, flat design and slim depth for easy installation. You can also use the versatile Alpine Tunelt app. iLX-007E, iPhone and Apple CarPlay — a brilliant combination.

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## SUBWOOFER OF THE YEAR - SQ: **IMAGE DYNAMICS IDMAX12D2**

HIGHLY COMMENDED: **MTX AUDIO 7512-44 • ORION COBALT C0124S**

In its fourth incarnation, the Image Dynamics IDMAX12D2 subwoofer reintroduces itself as a powerhouse of subwooferage. Here is a sub that uses a traditional fibre cone terminating in a massive EROM rubber roll, and marries it to dual high-power 2-ohm copper voice coils placed within a flux field created by a motor featuring no less than a triple magnet stack, and a massive one at that. A large pole vent

and multiple air vents, in conjunction with that superb magnet and voice coil combo, allow a power rating of an astounding 1000W continuous and 4000W peak! SPL territory for an SQ sub translates into lots of headroom while retaining sound quality. And indeed, the sound produced by the IDMAX12D2 was tight, extended and powerful. Low-end at its best. [www.mobileaudiosolutions.com.au](http://www.mobileaudiosolutions.com.au)



## SUBWOOFER OF THE YEAR - SPL: **HERTZ SX300D**

HIGHLY COMMENDED: **PIONEER TS-W1200PRO**



Italian car audio specialist Hertz has had a hiatus from the SPL subwoofer category, but anything the company decides to take on is met with market success — it really knows what it's doing when it comes to audio. And it has the financial backing of the Elettromedia Group of companies which also includes high-enders Audison, Connection and Audiocomp. This is a substantial driver weighing in at 12kg

and featuring a massive foam roll surround allowing 75mm of excursion! Four-layer 65mm formers contain the dual two-ohm aluminium voice coils which drive the pressed paper cone. The judges were impressed: "the SX300D subwoofer is the ultimate blend of clean looks, controlled sound and rib-fracturing force." Hertz once again shows off its engineering mettle. [www.hertzaudiovideo.com](http://www.hertzaudiovideo.com)

## SUBWOOFER OF THE YEAR - ACTIVE-PASSIVE ENCLOSURE: **FOCAL DSA 500 RT**

HIGHLY COMMENDED: **ORION COBALT C0124SBSV-4 • POLK AUDIO DXi1201**

Once again, now in this category, Focal shows its innovative and engineering power. The DSA 500 RT is an active enclosure subwoofer — but not as we know it, Jim. Firstly, it's immaculately built and assembled. Secondly, it features an unusual 6x9-inch driver with the largest magnet we've seen in a driver of this type. Thirdly, the on-board amplification features a 165W amplifier for the sub while two additional channels (each at 65W) are

provided in order to power main speakers, automatically providing an upgrade to a factory system. Fourthly, a download from Focal's website provides a software package (PC and Mac) that allows set-up and setting of all the crossover parameters, EQ (7-bands parametric), time alignment and more from the comfort of the driver's seat. Sonically the sub performs just as impressively with one judge in particular exclaiming "this is one of



the best band-pass enclosures I've ever heard". In fact, we all agreed: Focal has done it again. [www.focalaustralia.com.au](http://www.focalaustralia.com.au)

## JUDGES' CHOICE: **AUDISON BIT PLAY HD & BIT PLAY HD-SSD**

NO HIGHLY COMMENDED IN THIS CATEGORY



It's an ever-changing world for car audio and Audison has preempted the next big thing by releasing a product that will cater for media playback well into the future. The bit Play HD is an advanced digital player, signal router and media storage solution. It handles just about any media format, be it audio or video, compressed or uncompressed, via a multitude of input and output connecting options. It's

an internet hotspot and features a Wi-Fi dongle as interface with your smartphone for control and data transfer via a free app and DLNA. An additional model, the bit Play HD-SSD, features an in-built 260GB SATA 3.0 SSD hard drive for storage purposes. For these reasons of innovation, and a whole lot more, the bit Play HD receives our Judges' Choice Award. [www.audison.com](http://www.audison.com)



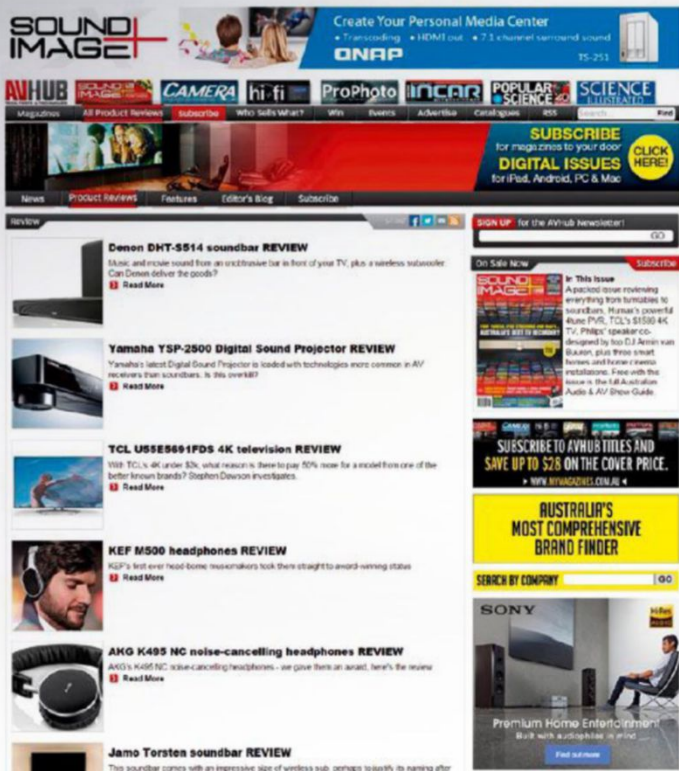


SOUND+IMAGE AWARDS 2015

# SPECIAL AWARDS







MOST DOWNLOADED REVIEW

# JBL Studio 590 loudspeakers

If you haven't yet visited us at [www.avhub.com.au](http://www.avhub.com.au) — well, you're missing out! Apart from keeping up with the latest AV news and releases, we post new and archive reviews up there in full, often with PDFs of the original pages so you can see all the images, reports and specs in their full glory. We share AVHub with our sister titles *Australian Hi-Fi*, *Australian Camera*, *Australian ProPhoto* and *Australian Incar Entertainment*, so you can also browse their news, views and reviews.

So marvellously trackable are your visits to our site that we decided to implement a new award for the Most Downloaded Review each year — one award where the judging panel had to do nothing else than count up the preferences of the browsing public.

So we're not talking news stories here, we're talking full in-depth reviews from either *Sound+Image* or *Australian Hi-Fi*, and the numbers of people who have sought these out and downloaded the full review.

The top five makes interesting reading — there are products both high-end and entry-level, and although the *Sound+Image* team is a little disappointed that the winner was an *Australian Hi-Fi* review, we must bow to the preferences of our online readership.

Here are the top five — and they're still there (once posted, our reviews stay there for ever) so if you want to swell their numbers for next year — head to [AVHub.com.au](http://AVHub.com.au)!

- MOST DOWNLOADED:**  
**JBL Studio 590 loudspeakers**  
**SECOND PLACE:**  
**Yamaha A-S3000 amplifier**  
**THIRD PLACE:**  
**Strong SRT AN4 set-top box**  
**FOURTH PLACE:**  
**Moon 340i DPX amplifier**  
**FIFTH PLACE:**  
**B&W 802 Diamond**



READERS' CHOICE

# Yamaha Music Australia

**D**id you take part in our Reader Survey earlier in the year? There was a question in there about your preferred audio or AV brand, either owned or aspirational — we gave you space to pick a first, second and third choice.

Well, that was us cunningly introducing an inaugural Readers' Choice award. *Australian Hi-Fi* asked exactly the same question in its own separate Reader Survey shortly afterwards, and then we combined the results to determine winning brands. We took great care in qualifying all this — we printed a special code in the print and digital editions of the magazines and then only counted votes from survey respondents that included that code when prompted — to show that they were genuine readers rather than some passing web-bot or internet randoms entering simply to win the prize we'd included to thank you all for taking the survey.

So our congratulations go to Yamaha, which not only topped our carefully calculated list of readers' favourites but did so by a significant margin, with more than double the votes for second place brand Marantz. The full top ten is listed below (actually eleven, as we had a three-way tie for ninth place).

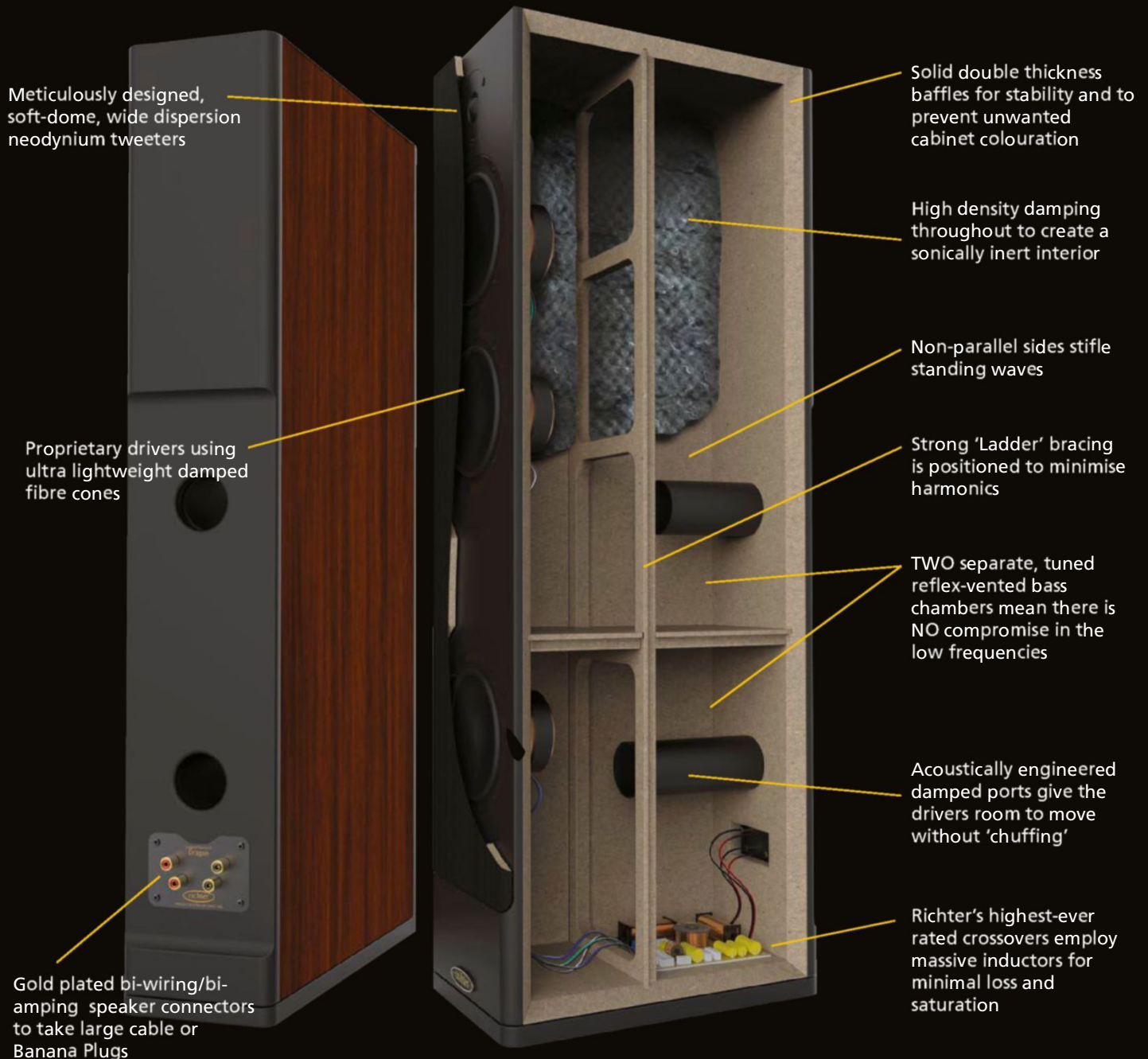
Of course, now we've told everyone what we're doing, we'll have to find a whole new way to do this for next year...

- FIRST PLACE:**  
**Yamaha Music Australia**  
**JOINT SECOND PLACE:**  
**Marantz, Pioneer**  
**FOURTH PLACE:**  
**Bowers & Wilkins / B&W**

- FIFTH PLACE:**  
**Panasonic**  
**JOINT SIXTH PLACE:**  
**Denon, Oppo, Samsung**  
**JOINT NINTH PLACE:**  
**NAD, Sony, VAF**



# Inside the DRAGON SERIES V



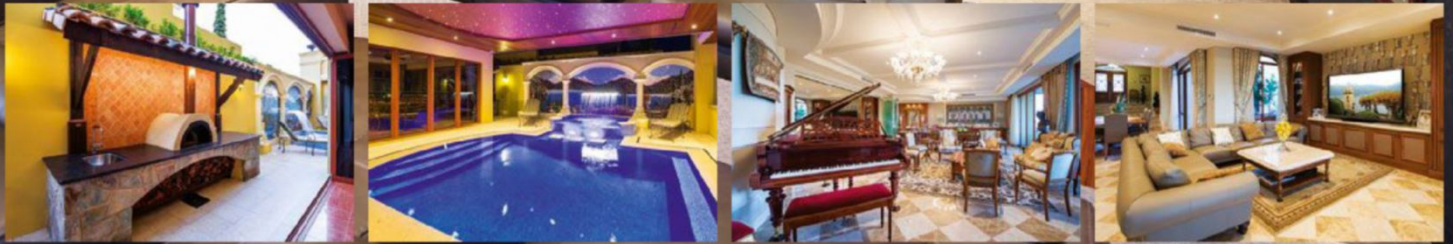
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## INSTALLATION OF THE YEAR

# Surround Sounds

The team from Surround Sounds in Western Australia was amazed when they saw the plans for this home, built over three levels on a sloping block in Perth's riverside suburbs.

"We could see the contracting of quality artisans to the project, and we knew it was going to be something special," Surround Sounds' Mark Jeisman told us. "This Tuscan-Sicilian-themed home is simply a work of art — an ode to the homeland heritage of the owners."

So while the tech is everywhere in the home via Crestron control of lighting, security, access, climate control and endless

zones of distributed entertainment, it's all kept carefully discreet, so as not to interfere with the décor. Indeed with that indoor-outdoor pool (decorated with a hand-painted vista of Italy's Lake Como on hand-cut tiles), not to mention the traditional pizza oven in the courtyard, there's plenty to keep the owners entertained even before they head to the 80-inch Sharp TV in the family room, or the 65-inch Samsung in the games room, or the magnificent dedicated home cinema (main image above). This last has a 158-inch curved Stewart Filmscreen Cine V 2:35 screen with B&W speakers, Rotel power and Onkyo processing, and it accesses

the home's massive 12TB movie server which can stream HD movies to anywhere in the home using Kaleidescape Mini Players as receivers. Twelve zones of multiroom music are delivered via Sonos and played through discreet Flatline in-wall or in-ceiling speakers.

There are Crestron and RTI controllers in the home, but everything can be accessed via the owners' iPads, keeping the home clear of visible technology so they can enjoy their home and its views of the Swan River. Such is the quality and depth of work here, we're delighted to recognise it with our award.

More info: [www.surroundsounds.com.au](http://www.surroundsounds.com.au)

## HIGHLY COMMENDED: LEN WALLIS AUDIO

The Len Wallis Audio team in Sydney deliver so many high quality projects in a year that there were several that could have received awards here. But this 1930 Federation home is a great example of their work, with lighting, security, AV and data all integrated while

maintaining the period features and look, and with a theatre — described as a "kids' ultimate media space off a comprehensive games room", although the owner also uses it for two-channel listening. This has a 130-inch screen with 3D JVC projector and Marantz/Focal

audio system. LWA's neatness in hiding away multiple racks of kit under the screen and the projector dropping down from a bulkhead is typical of their high quality solutions. Control is via Savant, including iPads.

More info: [www.lenwallisaudio.com.au](http://www.lenwallisaudio.com.au)







## HOME CINEMA INSTALLATION OF THE YEAR

# Cableman

**O**ur home cinema installation of the year is this stunning theatre from Cableman, based in Carnegie, Victoria. While the final finish is exceedingly impressive, the quality is far more than skin deep, with a meticulously planned acoustic design which enjoyed input from David Moseley of Wavetrain Cinemas. The room was designed from the start to minimise bass resonance frequencies, while the floor is floating through the front of the cinema and walls and ceiling are mounted using Kinetics IsoMax resilient sound isolation mounts (240 of them in total) to stop structural vibrations

transferring through the concrete structure, reinforced with QuietGlue dampening to minimise airborne sound through the walls. The noise floor in the room itself was kept whisper-quiet by a Wavetrain-engineered air-conditioning system using yacht-type ducts of bending plywood to achieve an NC20 rating. There's also extensive acoustic treatment, much of it concealed behind those Roger-Deanesque side-wall cut-outs.

Then the audio system was engineered to achieve a full 105dB playback with 3dB headroom — “the maximum dynamic range achievable under industry standards”, says

Cableman. The 7.1-channel system employs Marantz processing, power amplification from Cary Audio, Triad Platinum LCR and Gold in-wall surrounds, and no fewer than four subwoofers to ensure even bass at all listening positions. Cableman tells us that once fully tuned, the system's voice intelligibility was impeccable and reference playback clean, clear and effortless.

With video gear equally highly specified, including Sim2 Nero 3D projector with Xeit lens projecting onto the 145-inch Screen Excellence screen, this is as good as dedicated home cinema gets. [www.cableman.com.au](http://www.cableman.com.au)







## HIGHLY COMMENDED: THE DIGITAL PICTURE

We do like a place where you can watch a 140-inch screen as you shake yourself a martini! This is also a great example of a room that shows how high-quality home cinema presentation can be combined with other purposes. Here the owner requested a powerful cinema experience that would work well within his poker room and bar areas, while providing an excellent picture and clear audio beyond the primary seating area alone. But sound isolation was also important, as the house was built on a narrow block with close neighbours. The client was very specific that movie playback even at its highest SPLs should not be heard outside the house.

The Digital Picture, based on the Gold Coast in Queensland, worked with Wave-train Cinemas on a solution using dense structural plyboard and SoundCheck plasterboard on Kinetics IsoMax mounts, plus QuietGlue, careful ceiling and air-con design, and then acoustic treatment. The system achieved impressively even bass output courtesy of twin subwoofers backing Triad Gold speakers and Denon/Acurus processing and power, while the projection system uses an ISF-calibrated Sim2 Nero 3D projector and Xeit lens to create a bright and accurate image on the Screen Excellence screen. All this and a poker table too! [www.thedigitalpicture.com.au](http://www.thedigitalpicture.com.au)



## CUSTOM INSTALLATION PRODUCT OF THE YEAR

# Krix Epix

**T**imes were when we really wouldn't recommend any in-wall speaker to readers with an interest in sound quality. But times change, and a couple of decades of development (and the involvement of serious speaker companies) means that we must update our thinking. We were thrilled by the sound of the Krix Epix — and no wonder, since this is a modified in-wall version of the company's award-winning flagship Neuphonix. They use six drivers in a proper three-way cabinet — Krix is very clear about the need to back-box in-wall speakers, both to ensure their correct response and to minimise sound passing back into the wall. And Krix being proudly Australian, the Epix were specifically designed to suit Australian Standard 45×90mm or 35×90mm timber stud walls, coming complete with mounting hardware and plasterboard fixings, and a removable grille frame which is covered in cloth that can be dyed to match your wall colour. Use three in an LCR arrangement around your TV screen and dye them in this way, and you have an extremely discreet but very impressive speaker system. They are priced at \$1995 a unit, and they sound significantly above that, a huge achievement for an in-wall design. More info: [www.krix.com.au](http://www.krix.com.au)





BLU-RAY OF THE YEAR

# Gravity

If you buy yourself only one Blu-ray for Christmas, make it *Gravity*, and preferably *Gravity* in 3D. We gather that some find Sandra's space station-hopping trip back home a little out there in plot terms, but for us the sheer realism of the visuals and the sound design just carried us through to the other side. And on technical merit as well as artistic vision, this was the only Blu-ray this year to which our diligent reviewer Stephen Dawson awarded our full five stars.

Take the soundtrack. It seems sparse, being set in space, but some fascinating decisions were made, key among them being that the sound should reflect what the characters would hear within their spacesuits. Since sound doesn't travel through the vacuum of space (as any good *Alien* fan knows), the sound designers realised that only when touching other objects would sound be transmitted into the suit. So when they touch something, you get bass-heavy muffled audio, as if transmitted through solid objects, not air. A lot of the dialogue is suit-to-suit radio, so this has the same limited but realistic quality as the visuals. As for British film composer Steven Price's score, it is eerily non-musical, swelling to massive levels and then cutting sharply to utter silence, charting emotions as much as action.

The soundtrack on Blu-ray is all delivered in losslessly compressed DTS-HD Master Audio 5.1, but with 16 bits of resolution rather than the more common 24 bits. If the latter would be any better, it's hard to see how.

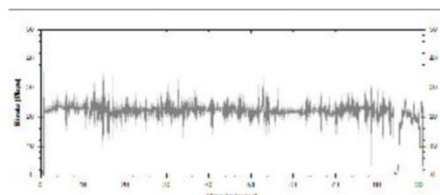
As you learn from watching the extensive and excellent extras on the Blu-ray, the majority of scenes were created almost entirely using CGI, with only the actors' faces being filmed to drop into this artificial world. To achieve realistic lighting on their faces they worked within a large booth lined with LED displays onto which the 3D pre-vis animation was played during filming, not only delivering accurate lighting and colour but allowing the actors to know what was going on around them. It's an incredible success, seamless in Blu-ray delivery, and the attention to detail is glorious, with the space helmet visors reflecting the Earth underneath, or objects and people, and the glass itself is a little smudged, grimy, and fogged with exhaled breath. Yet the visors weren't even there during filming. It's all done in-computer.

The 3D version is clearly pivotal in the development of this cinematographic art. The feelings of space are enhanced by the 3D, but the disc will certainly test your 3D crosstalk for ghosting — the space suits, the space craft, all

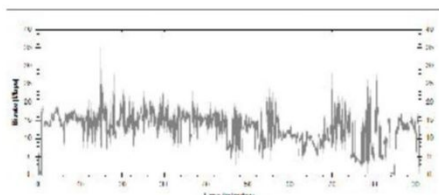
are white or lightly coloured against the deep black of space. Ghosts are obvious — we've seen some displays deliver three times as many stars, thanks to the ghosts on both left and right of what you're supposed to see! DLP projection or passive 3D (with a 4K display to preserve full resolution) are the ultimate way to view this work.

The extras also reveal how difficult it was, and how many different methods were used, to achieve realistic movement of bodies, powered and unpowered, in an airless, weightless environment. The entire thing is astonishing, with Clooney scooting around with his jet pack, Bullock being flung around at the end of the Shuttle's detached control arm. The two scenes in which space stations are destroyed just take your breath away in 3D, slightly less so in 2D. Way back in 1968, Stanley Kubrick delivered a respectable job — not perfect, but respectable — of showing what it might be like to move through space, to be in free fall, to experience an environment without air. Others have tried since. None has done it better than *'Gravity'*.

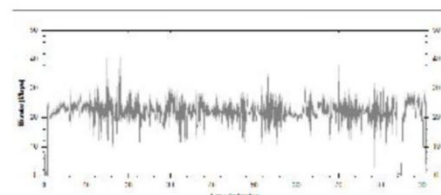
We love the movie, we love the extras. But it is the technical delivery, all the way from conception to visual and audio design through to Blu-ray, that has us humbly offering up our first ever Blu-ray of the Year award.



Video bit-rate for 'Gravity' 2D main feature



Video bit-rate for 'Gravity' main feature, 3D MVC



Video bit-rate for 'Gravity' main feature, 3D AVC





## JUDGES' CHOICE

# DEQX PreMATE

**W**edon't deliver a Judges' Choice award every year — we keep it for when something comes along that doesn't fit into a category easily, or just *so* impresses us that it requires special recognition.

And this year we are recognising a product that takes an Australian team's leading-edge digital processing, makes it even easier to operate *and* adds a high quality preamp section with a superb DAC implementation. Priced at \$4995 (for once, an Australian price lower than the US one!), in the right system it offers amazing value.

So we are giving our Judges' Choice to the DEQX PreMATE digital processor and preamplifier, a truly outstanding 'digital solution in a box'. Now we just have to explain to you everything it does...

The PreMATE is best described as an analogue preamplifier with built-in DAC that also features the DSP powers that have made DEQX world-famous — on-board crossovers, room correction, speaker correction, digital equalisation. It sounds complicated, but it isn't

— indeed that's the whole point. DEQX wanted to achieve a product that would easily fit into established audio enthusiasts' systems without upsetting traditional configurations, yet offering an avenue into the advanced wonders of digital manipulation.

So, in its basic guise, the PreMATE can be used as a high-quality preamplifier with a 32-bit resolution DSP volume control. It can accept a digital signal from a CD transport or a computer while also taking a balanced and single-ended analogue input (all switchable via the remote control). The in-built high-quality PCM1795-based DACs then take over the signal, do the number crunching, and pass it on to analogue line outputs to connect to a power (or integrated) amplifier.

Then comes the cream. First a simple process allows for room-mode corrections to be applied, which can be saved and accessed via the remote control. When we reviewed the PreMATE, the measurements were taken from the listening position and time-domain room correction was applied below 200Hz to correct a minor room-related bass hump around 100Hz.

As conducted by DEQX's Alan Langford, measuring took all of 10 minutes. Corrections can be made in real time and stored.

A second level of digital wizardry provides speaker correction, compensating for group-delay errors so all frequencies are aligned in time. And third, if you use a subwoofer it can correct for impulse response timing errors to allow seamless subwoofer integration, along with adjustable low-pass and high-pass filters.

So the PreMATE can fit into a system with as little or as much re-configuration and manipulation as the individual is willing to undertake. In a system of similar-level components we found it can deliver far more than its value in improved sound quality at the listening position, not to mention its fine abilities as a DAC/preamp, with four digital inputs and optional USB.

To achieve so much in an easy-to-use unit (and with excellent support — a 'DEQXpert' online installation service can drive the set-up software for you), this is an Australian product that is ready to take on the world.

More info: [www.deqx.com](http://www.deqx.com)



NO HIGHLY COMMENDED PRODUCTS IN THIS CATEGORY





**SOUND OFF**

# The Fight for HEIGHT!



**Can Barco's Auro beat Dolby's Atmos? Never mind the rumble in the jungle – this is a fight for height. Derek Powell referees.**

**T**here's a slow-motion war under way to become the 'Immersive Surround Sound' champion in the commercial cinema world. While only a few Australian enthusiasts may have heard of them, Barco (wielding a combination of their high technology projectors and an 11.1-channel system called

Auro) is campaigning hard against Dolby (brandishing Atmos) to sign up cinemas to their respective immersive audio systems.

For those who need to catch up, cinema surround sound is currently trying to re-invent itself into the Next Big Thing — generally styled as immersive, multi-dimensional or '3D' sound. It's surround

sound with height, so movie sound effects can come from above as well as all around in the movie theatre (or potentially your home cinema system).

As with most 'new' technology, the idea that a soundstage should have height as well as width and depth has been touted for a while, and we have reported on a



few '3D' sound technologies in the past (if you maintain a healthy collection of *Sound+Images*, see web reference 1 below for the relevant issues!).

In an interesting move, Auro protagonist Barco has just acquired one of those technologies — they've bought Iosono, which gives Barco in-house access to expertise in wave field synthesis technology. That may just lead to an edge over Atmos, as we will see in a moment.

The real prize, of course, is not in the cinema market but in incorporating the winning technology into mass markets of home cinema, gaming, automotive and even mobile devices. Winning over cinemas is just the first step that will see more blockbuster movies mixed in Auro or Atmos. That battle will be the key to the wider war.

There's quite a bit to separate the two systems in purely technical terms, so before we try to figure out how this will filter down to the domestic world, let's take a peek behind the velvet curtains into the cinema world.

## AURO 11.1

The simpler of the two immersive systems is Auro, developed by a relatively small company, Auro Technologies — itself a spin-off from Belgian recording and post-production company Galaxy Studios. We might never have heard about Auro had they not partnered themselves with another Belgian firm located just a 90-minute drive to the east. Barco, well known to Australian AV professionals for high-end commercial projection systems, has made Auro part of their digital cinema solution.

Auro has a number of possible speaker arrangements but its basis is a three-layer model with a conventional 'lower' layer of Left, Centre, Right and left and right surround speakers (that's five channels). Positioned directly above them is a second 'height' set of Left, Centre, Right and L/R Surround speakers (another five, making ten so far). This is topped off with a 'Top' speaker directly overhead. That makes up 11 in the 11.1 system, with the .1 being subwoofer. Auro describes itself as a 'channel-based' system, and that's the biggest difference from Dolby's Atmos 'object-based' technology, as we will see.

## CHANNELS VS OBJECTS

A movie soundtrack in a channel-based system is mixed in (say) 12 channels, stored as a PCM 12-channel WAV file and then reproduced through a 12 (or 11.1) channel audio system in a cinema. For a movie

soundtrack mixed in an object-based system (like Dolby Atmos) the process is different. Different sound elements (objects) are packaged with their own metadata that defines the 3D position of the sound using information such as levels and vectors. These 'objects' are likely to be things that whizz around overhead, like bullets or battle-stars, to make us feel like we're in the thick of the action. When the soundtrack is played, a decoder reads the information about where each sound is to be placed and then decides which speakers to send it to, considering the set-up that exists in that cinema.

The benefit here is that the same movie soundtrack could be reproduced on a stereo, 5.1, 7.1 or 3D immersive system with any number of channels, and the individual sounds would always appear as close to the intended position as the capability of the replay system would allow. What's more, the track could even be made to reproduce with some 3D elements through conventional headphones. That's a powerful advantage for cinema owners, as they could play the same movie in different spaces and while the sound would be spectacular in a fully equipped multi-speaker cinema it would still give a high quality surround sound experience in smaller spaces with 5.1 or 7.1 equipment.

Naturally, that can also be made to translate to a variety of home cinema set-ups, so users can get a surround experience now, then an immersive 3D soundfield as they add 'height' speakers later.

## KEEPING IT SWEET

But here's the rub, no matter how many speakers are used, the best experience will always be in the 'sweet spot', dead in the centre of the cinema. Sound engineers know that not everyone will be able to sit in the sweet spot, so they have to limit how closely individual sounds can come to the audience. For someone down the front, the same sound will appear to be in a different spot to someone sitting at the back or to the side. *Sound+Image* Editor Jez Ford noticed this problem right away, and if you haven't read his reaction to Atmos, then I suggest you check out his detailed article on AVHub (reference 3 below, see also p14-15). But then come right back, as we check out how wave field synthesis could help.

When we last reported on the company in 2005, Iosono was working on audio systems that gave a rock-solid soundstage even as a listener moved throughout the entire listening space. But the first iteration of this system used literally hundreds

of speakers. Things looked promising to refine this to a more manageable system, but in 2005, the digital audio processing power required to set up a soundfield where every spot was a sweet spot was pretty expensive, and their ideas didn't quite get the traction they might have in the mass market.

Fast-forward to 2014, with another decade of digital signal processing development under our belt, things might be about to change. Iosono hadn't been standing still, of course, and built up a handy amount of expertise creating soundfields for events, expos, theme parks and cinema. But where does this fit in? Iosono technology sounds a lot more 'object-based'.

Interestingly, Auro is now softening its line that the technology is 'channel-based' (which it had noted in some publicity material gives them the edge over 'object-based' systems like Atmos). Wilfried Van Baelen, the inventor of Auro, is quoted as saying: "We are so excited to be able to work together with more innovators like IOSONO to further develop the tools and processes that make the object-based part of the Auro-3D format a truly magical experience... we look forward to showing the world what this new element of collaboration will yield for the industry."

Thanks, Wilfred — we will all look forward to seeing what's next. Will this be the best of both worlds? Atmos may be gathering traction in some consumer products, but these are still early days, and Auro is starting to sound interesting. *Derek Powell* ✦

## WEB REFERENCES

- 1 If you've got a collection of *Sound and Image* back issues, you may care to check out the *Sound-Off* columns in 2005's Volume 18 No7 "Farewell to the Sweet Spot" and 2011's Volume 24 No 6 "Listening out for 3D Sound".
- 2 Barco has published a useful (if somewhat one-eyed) explanation of the differences between object oriented and channel-based immersive sound systems: Auro 11.1 versus object-based sound in 3D. You can download it from: [tinyurl.com/q8k4wze](http://tinyurl.com/q8k4wze)
- 3 Our editor Jez gives a great explanation of Atmos strengths and weaknesses at [tinyurl.com/atmosdemos](http://tinyurl.com/atmosdemos)
- 4 If your interests are a little more in-depth, have a look at this interview with Auro CEO Wilfried Van Baelen at [www.audioholics.com/audio-technologies/auro-3d-interview](http://www.audioholics.com/audio-technologies/auro-3d-interview)





## SOUND+IMAGE AWARDS PRESENTATION DINNER 2015

# Putting on the Awards



The Sound+Image Awards have two faces. One is before you now in print or digital form — our annual Special Awards Issue where we detail the award-winners in each category, so that our dear readers can see not only what has won but why, along with the Highly Commended awards which may offer a more suitable alternative at a different price or for a different person.

Within the industry itself, however, the Sound+Image Awards can mean either the awards themselves or the evening on which they are announced. We've been hosting an Awards presentation since 1989, making these our 26th, and the evening is now usually a sophisticated black-tie event held in an upmarket hotel ballroom, although those old enough to remember their inception describe the very first awards night as being "a low key affairs at the Artamon Shore Motel". (There are even rumours that one year the Awards were held in a downmarket Melbourne discotheque, but for the purposes of this article, let us focus on the present.)

Preparation is everything. This year's Awards were booked into the same venue as the Audio & AV Show, using the Rialto Room of the Melbourne InterContinental The Rialto (as they choose to call it), a three-section ballroom on the Lower Ground floor of the Rialto side of the hotel. Most such venues come with a resident AV company and we were pleased to find that for the Rialto Room that company is Staging Connections, a company with which we had previous experience. With our guests for the evening consisting almost entirely of people in the AV industry, serving them bad AV quality is a sin second only to serving up bad or insufficient wine. And we had come a cropper only a few years ago at another Melbourne venue, where the resident AV provider delivered a wholly inadequate PA with a portable four-channel mixer and an under-equipped operator, who despite a simple enough brief with comedian and no live band, was far from ready only an hour out from the show. Things went ahead only through the efforts and AV knowledge of our own team — it was a hairy night!

The following year we were back in Sydney at the luxurious Sheraton on the Park, blessed with a Staging Connections team that was fully set up by noon, adding under-stage subwoofers when they understood our unique audience, and providing a leisurely sound-check for the two musicians, Stephen Lalor on guitar and Anatoli Torjinski on cello, two-thirds of the Volantinsky Trio. On the night it sounded superb, both with pre-recorded music and for the fine musical performance. We sent an appreciative email to Staging Connections the next day, enthusing that it was "by some yards the best sound, and best staging we've had in the seven years I've been doing the Awards".

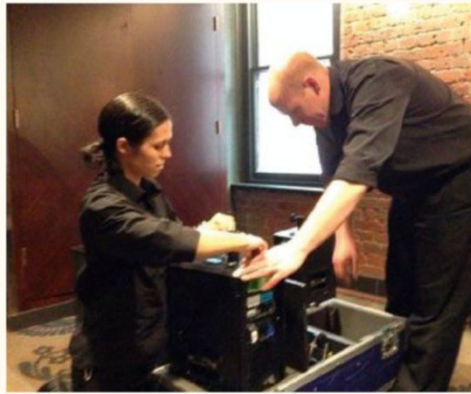
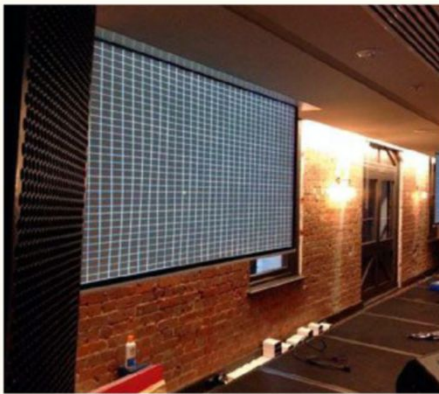
Everyone loves an unsolicited compliment, and we were soon asked by the company's marketing department if they could use some of our words as a reference — and to let them know if we'd be working together again.

This we did, and the renewed acquaintance led to them accepting our invitation to be official AV partners for the Awards evening, thereby enabling us to spec the equipment for the night rather beyond what we might



## STAGING CONNECTIONS

Staging Connections will need no introduction to anyone on the pro side of AV — the company has nearly 30 years of experience as a leading event staging services provider, and currently operates across 100 locations and inhouse partnerships at over 70 premier venues not only in Australia but throughout the Asia-Pacific. Our humble Sound+Image awards barely scratch the surface of the abilities of their team of professionals from event staging and project managers, technical directors and production co-ordinators to stylists, multimedia technicians and set designers... but we can certainly attest to their professionalism, since the most successful awards nights we've had in the last 10 years have been with Staging Connections behind the desk. We were delighted to have them as official AV partners for this year's Sound+Image Awards night.



ABOVE: Dan Huxley and Sonja Vandenberg from Staging Connections set up the video screens and audio PA, while the hotel staff set the tables;

BELOW: they confidently prepare to launch the intro video for the Show, while Editor Jez Ford hovers at the back, ready to take to the stage...





## SHAUN KIRK: BLUESMAN

We used to favour a comic turn for the performance section of the Sound+Image Awards, but in recent years we've come to realise that music is the thing, being at the heart of our industry. When we found Shaun Kirk, with thanks to Yamaha Music Australia for their suggestion, it took only a single viewing of his version of *Smokestack Lightning* on YouTube to have us picking up the phone to book him. He didn't disappoint. Playing solo but delivering vocals, harmonica, guitar (with bass from his thumb), drum pedals plus a horde of effects pedals, Shaun kept the awards audience uncharacteristically quiet through his own blues songs and covers (including, at our Editor's request, *Smokestack Lightning*!). Don't take our word for it – check him out on YouTube and find his music on iTunes or Spotify (new album *Steer The Wheel* and also *The Wick Sessions* recommended).



otherwise have requested, promising a good time for all!

Our Staging Connections contact for the Rialto Room was Chris Lee, and we rapidly realised we were in good hands. Chris “grew up in rock’n’roll”, as he says, once the “house guy for The Espy in St Kilda” (recommendation enough for those of us addicted to Rockwiz) before working with various production companies and as tour management before the wife and kids led to him “settling down” with Staging Connections.

But was he alarmed at the prospect of an awards event where the audience was all from the AV industry and would be critiquing the sound quality?

“No, not at all, I had perfect faith!” he laughed when we asked him this after the event. “My only regret was that I would have liked to have mixed it myself once I saw the video you sent of Shaun doing *Smokestack Lightning*...” [We recommend searching for this on YouTube.]

It was the same video that had settled us in our search for a music performance for the night (see panel) — young bluesman Shaun Kirk was recommended to us by Yamaha Music Australia, whose guitars he uses. Though he performed alone as a solo performer, he delivers vocal, guitar, blues harp, four drum-triggering foot pedals and a host of effects, so that the mix for his set was almost as complex as for a three or four-piece band. Once Chris had been sent Shaun's stage set-up, he recommended that we consider having a second operator for the night.

“I wanted someone to concentrate on the AV side and someone separate to concentrate on Shaun's performance,” Chris explains. “We ended up using a much bigger desk than originally planned, which could handle everything. It certainly worked, having an experienced mixer there for sound-check and the show.”

Shaun Kirk pulled up in his van at 5pm. Entirely self-sufficient at touring (we spotted a mattress in the van as well), his equipment was compact enough to require only a three-man shift, but once unpacked revealed a horde of footpedals and other accessories — we reckon he must be the best customer in Australia for PP3 batteries. Sound mixer Dan Huxley spent all the time to look to get everything just so, then Shaun disappeared into the night to build up his blues for his 9pm performance.

Either side of Shaun's performance, there were two sections of awards to be announced. Much of this is our Editor rambling on about whatever comes into his head up there, so both Dan and AV operator Sonja Vandenberg had to remain alert throughout the night to hit the cues for walk-up music stings as each award was announced, as well as for the various videos through the evening. Each winner gets to make a speech, and some of those required careful riding of the radio mike channel to compensate for what we'll politely call variable microphone technique.

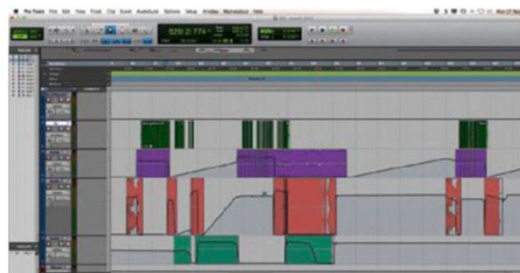
We were confident — we could see during set-up that both Sonja and Dan knew their stuff, routing ring mains and clearing channels, so that by the time our full Sound+Image team had made it through storm-invoked Sydney-

to-Melbourne flight delays of up to five hours, the room was already decked out by the hotel staff, place labels neatly laid and, thanks to Dan and Sonja, both projectors and sound systems in place, working and tuned.

All that remained was for our on-stage MSI laptop to be connected up — this has caused issues in some other venues where frame rates and resolution were less clearly understood, but here everything was working within minutes. Our various video introductions (created in Corel Video Studio X7 Ultimate and output after much deliberation as 720p/50 WMV files) proved also fully compatible with the back-stage Lenovo laptop and came up crisply on-screen through the three in-house projectors and screens. We had, needless to say, checked aspect ratio and resolution before commencing work on the videos.

An experienced and able crew makes all the difference between a slick show and a stilted one — we didn't hear a missed cue all night, and when some changes in procedure required unscheduled shelving of one video, the Staging Connections duo took instruction from the stage with calm, confidence and accuracy. With equally smooth service from the hotel's catering and service staff, and a blinding performance from Shaun Kirk, we trust a good night was had by all who came, and we thank our Awards sponsors for the after party in particular!

Since the event, Staging Connections has sent us several emails asking us for feedback on their performance. We hope our thanks, and this article, will suffice! —



Audio is mixed in ProTools (left), video in Corel (centre). We sent an advance run sheet to Staging Connections

| RUN SHEET FOR STAGING CONNECTIONS<br>S+I Awards 2015  |  |
|---|--|
| 7.00 – 7.45pm   | Background music: NOT TOO LOUD.<br>Main Awards loop on screen (blue stage laptop)                    |
| 7.30pm  | Seat guests.   |
| 7.45 (Jez will cue)   | Dim house lights<br>VID 1 INTRO (5 minutes with audio LOUD)  |
| 7.50  | Jez on stage, lecture mikes.<br>Fade from video to stage laptop                                      |
| Jez presents (10 minutes).  | Introduce Chester Group VID 2 CHESTER<br>Roy Bird Speech<br>Back to Jez & onstage laptop for awards. |
| 10 Awards with WALK UP MUSIC for winners.   |  |
| EACH CATEGORY RUNS AS FOLLOWS:  |  |
| Category announced<br>(Music when Producers of the Year is announced)<br>OUR WALK-UP MUSIC (guitar and pumping)<br>BUT DON'T JUMP! ONLY WHEN WE ANNOUNCE PLEASE CONFIDENTLY<br>Shower make speech USING RADIO MIKE.<br>(Jez may also switch to radio mikes if it sounds better) |  |
| Within five min. TWO MORE SPONSOR VIDEOS<br>will run before final Awards announcements for  |  |
| - Category 4 LOUSPEAKERS UNDER 1000 VID 3 BROTHER<br>ENVIRONMENTS<br>- Category 11 USB SPEAKERS VID 4 ENTERTAINING<br>ENVIRONMENTS<br>- Category 19 HOME CINEMA INSTALLATION OF THE YEAR VID 5 HIGHS  |  |



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\*Note: the iTransmitter uses a 30-pin Apple connector

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# 110 AWARD-WINNERS!

## ALPHABETICAL LISTING OF ALL 'PRODUCTS OF THE YEAR' & 'HIGHLY COMMENDED' WINNERS

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